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MOTOR VEHICLE FUEL EFFICIENCY ACT

HEARING

BEFORE THE

SUBCOMMITTEE ON THE CONSUMER

OF THE

COMMITTEE ON COMMERCE SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

ONE HUNDRED SECOND CONGRESS

FIRST SESSION

ON

S. 279

TO AMEND THE MOTOR VEHICLE INFORMATION AND COST SAVINGS ACT TO REQUIRE NEW STANDARDS FOR CORPORATE AVERAGE FUEL ECONOMY, AND FOR OTHER PURPOSES

FEBRUARY 21, 1991

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MOTOR VEHICLE FUEL EFFICIENCY ACT

THURSDAY, FEBRUARY 21, 1991

U.S. SENATE,
SUBCOMMITTEE ON THE CONSUMER,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The subcommittee met, pursuant to notice, at 8:33 a.m., in room SR-253, Russell Senate Office Building, Hon. Richard H. Bryan (chairman of the subcommittee), presiding.

Staff members assigned to this hearing: Linda Lance and Moses Boyd, staff counsels; Alan Maness and Sherman Joyce, minority staff counsels.

OPENING STATEMENT BY SENATOR BRYAN

Senator BRYAN. Good morning, ladies and gentlemen.

I'd like at this time to welcome each of you to this hearing on S. 279, the Motor Vehicle Fuel Efficiency Act.

As I am sure all of you know, the legislation we consider today continues the effort that Senator Gorton and I began in June of 1989, to improve fuel economy for passenger vehicles.

As I said at that time when we introduced this legislation, more than a year and a half ago, it is vitally important to both the Nation's energy security and to our environment.

Tragically, in the intervening months, we have had a graphic demonstration of the truth of this statement. Today we are in the midst of a war in the Persian Gulf, the site of 70 percent of the world's proven oil reserves. Our most fervent hope is for a quick resolution of this war and for a lasting peace. At the same time, we know that this war may continue for some time, with a painfully, high human and economic cost.

This legislation will begin the process of changing the conditions that make us so dependent on the unstable Middle East and on the oil that we know ultimately is a finite resource.

We have been without an energy policy in this country for more than a decade. We now are living with a dramatic reminder that the consequences of such inaction for Americans individually and for our Nation as a whole are severe.

Conservation is an essential part of any strategy to address energy security. The transportation sector, which is responsible for 63 percent of the Nation's oil consumption, must be a part of any effective conservation effort. By raising the fuel economy standards for passenger vehicles 40 percent over the next decade,

the legislation which we have before us will save 2.5 million barrels of oil each and every day by 200S.

As significant as this is, the environmental benefits which will result from this legislation should not be overlooked either. By 2005, this bill will reduce emissions of carbon dioxide by 440 million tons each year. This will be vital in meeting our Nation's obligations to reduce the risk of dangerous global climate change.

While few would dispute the value of the goals of this legislation, critics from and on behalf of the auto industry will undoubtedly predict dire consequences if this legislation is enacted. You will hear that increased fuel economy standards will deprive the consumer of a full sized family vehicle. We will hear that increased standards will have adverse effects on vehicle safety. And we will hear that these standards will singlehandedly cause economic disruption in the auto industry and a loss of jobs for American workers.

The most striking thing about these claims is their similarity to the assertions made in the 1970's, when the industry opposed the current CAFE standards. History has demonstrated that those fears were misplaced then and I believe they are misplaced today.

Today's witnesses will discuss these issues. I believe the record will demonstrate that today, as in the 1970's, there is technology available that can achieve increased fuel economy without significant changes in vehicle size, and we need not and should not choose between safety and fuel economy. We can have both.

With respect to the economic consequences of this legislation, the industry need not meet these standards by simply holding large cars off the market. To meet the ultimate standard in the year 2001, the industry has 10 years to achieve these standards through technological improvements. If they do this, they should be more, and not less, competitive in world markets, and U.S. job opportunities should increase, rather than decrease.

However, it is important to note that this bill does not dictate the methodology by which the industry meets these standards. It is the proper role of Congress, in my judgment, to establish policy goals, while leaving as much flexibility as possible to the regulated industry.

This bill furthers the policy of maximum energy efficiency in the transportation sector that is consistent with the needs of the American consumer and the industry. The needs of the country for reduced oil consumption and carbon dioxide are, as I have stated, dramatic.

Serious long-term policies toward this end are necessary. However, while this bill will require effort on the part of the auto industry, it has also been carefully crafted with the industry's needs in mind.

No increase is required until the model year 1996, an additional year beyond that which would have been required by legislation that was introduced in the last session of Congress. This is in recognition of the lead time the industry needs to alter its product plans.

The bill does not require precise annual increases, as the current CAFE law does, but ssts standards at 5 years apart to permit the industry maximum flexibility in reaching the goal in each of these two years.

Finally, we may hear today about the recession that is gripping the entire auto industry, both foreign and domestic, as well as much of the United States economy. I am not unmindful, and I am certainly concerned, about the health of the industry as well as the United States economy. But I think, in fairness, I must point out that CAFE standards have not caused this economic downturn. Rather,

in the opinion of many, CAFE standards have forced the industry to diversify and to become more competitive.

I think it is noteworthy that the industry has resisted fuel efficiency regulation as well as safety legislation in both good times and bad, during record sales and in recessionary periods. So, while I am concerned about the industry and the economy, I am also concerned about the Nation's long-term energy security and our global environment.

The industry has a long lead-time to achieve these goals, and I do not believe we can wait longer to begin this effort. As we know from the nightly news and we'll hear in more detail today, the stakes are simply too high, and inaction is unacceptable.

I would like at this time to yield to the Ranking Member of the subcommittee and a principal cosponsor for an opening statement, Senator Gorton.

OPENING STATEMENT BY SENATOR GORTON

Senator GORTON. Mr. Chairman, last month I joined with you, as Chairman of this Subcommittee, in introducing the Motor Vehicle Fuel Efficiency Act. More than one-third of the Members of the Senate have joined us as original cosponsors of this legislation, and I suspect there will be additional sponsors as well.

Holding this hearing during the first week of the Commerce Committee's hearing schedule is further proof of our commitment and resolve to see this legislation enacted as promptly as possible. The Bryan-Gorton bill to increase the corporate average fuel economy is a much needed measure for three basic reasons.

First, it will improve our national energy security.

Second, it will improve our environment.

Third, it will save consumers money.

Events in the Persian Gulf have reminded us of our dependence on foreign oil and the need to move toward a more independent energy stance. During the OPEC oil embargo in 1973, we imported 36 percent of our oil. Today we import more than half.

Two years ago, then President Reagan informed the Congress under section 232 of the Trade Expansion Act that, and I quote him, "Petroleum imports threaten to impair the national security." Can anyone doubt the truth of those words today?

This legislation will mandate an increase in 1988 fuel economy levels of 20 percent by the year 1996, and of 40 percent by the year 2001.

By the year 2005, the Bryan-Gorton bill will save 2.5 million barrels of oil each and every day, the equivalent of 852 trips per year of a super tanker the size of the Exxon Valdez.

It is the single most important measure we can take to combat global warming. To translate saving 2.5 million barrels of oil per day to a consumer perspective, at current gasoline prices of about $1.25 per gallon, consumers will be able to save $48 billion a year at the gas pump.

Yesterday, we received from the President a proposed National Energy Policy. That proposal includes many valid proposals, much food for thought.

There is no question, however, but that it is primarily directed toward the production of additional, traditional energy sources.

In the view of this Senator, any valid National Energy Policy will have to include increased production of energy in the United States. It will also have to include alternative energy sources and a significant number of conservation measures.

The President's proposal does call for measures which would reduce our consumption of oil. But his figures could be doubled, or very close to doubled, at a single jump by the adoption of this bill.

In fact, the CAFE bill is the primary conservation option available to the people of the United States. Beyond the obvious environmental benefits, over the previously stated production choices, the CAFE bill has another advantage, it will simply save more oil than we can possibly produce.

Mr. Chairman, whatever choice we make eventually about production options in a National Energy Plan, we certainly ought to include in it the easiest choice of all: gaining benefits from conservation measures. That means enacting this legislation as quickly as we possibly can.

Obviously, Mr. Chairman, after our marvelously constructive partnership of the last two years, I look forward to working with you again this year at a time at which it cannot be frustrated by a filibuster on the floor of the Senate and to sending a proposal of this nature to the House promptly during the course of this session of this Congress.

Senator BRYAN. Thank you very much, Senator Gorton, for your testimony and for your leadership on this issue.

Joining us this morning is Senator Kerry, who was also a leader and a floor advocate on the last session of this measure. I will yield to you for an opening statement.

OPENING STATEMENT BY SENATOR KERRY

Senator KERRY. Mr. Chairman, thank you very much.

I want to thank you for reconvening this effort so soon, both you and Senator Gorton. Last year, we cam within a hair's breadth of passing this and breaking the filibuster, and I think since then, the events in the Gulf obviously only serve to underscore the idiocy of our dependency and the dangers really of the kind of interest politics that have prevented us from moving forward on this issue.

There were so many compelling reasons, and both of you have cited a number of them, as to why this legislation is important. It stands out, I think, as one of the most glaring examples of those kinds of legislation, of that kind of legislation, which does have so much merit on so many different accounts—national security, pollution, environmental concerns, consumer concerns—and yet, notwithstanding which, each and every one of those compelling reasons seems to meet a wall of resistance. It is my hope that this year we are going to break that barrier of resistance.

I applaud your leadership and your willingness to come back early in doing that.

It is really a critical issue.

Each of you has cited significant reasons. I don't think we can underscore enough the question of national security. Obviously you cannot underscore it enough at a time when young Americans are losing their lives and when we're poised to conduct a land war that is tied so directly to our dependency—not exclusively to it, but so directly, nevertheless, to our dependency.

And, when you measure all of the benefits, not the least of which would be the lack of need to conceivably be fighting in a war because of that dependency and the lack of effort to have an alternative strategy, it becomes even that much more compelling.

There is a timeliness in this which I think is more circumstantial than otherwise in that the President has now put out an Energy Policy. I congratulate him for putting out an Energy Policy. It is the first statement of an Energy Policy that we have had in the country for more than 10 years.

But that is not sufficient. Obviously, we have to measure the full weight of that policy itself. I think the policy is wanting, mostly because it is dependent on the production side, rather than on the conservation side.

I am not saying we should not be pursuing the production side. Obviously, we ought to do so. But it is totally unrealistic to not also be looking on the conservation side more significantly. The President has suggested, once again, that we need more studies.

We don't need more studies. There is not an American driving a car in any of our congested cities who cannot visually see the impact of a brown, orange-like smog line that literally prevents people not only from seeing, but from breathing. If we cannot respond to that empirical evidence, then something is really wrong with us.

In addition to that, there are some critical economic factors which we all understand. We are 5 percent of the world's population, but we are using 25 percent of the world's oil. We most significantly use it in automobiles.

Our dependency simply is confounding most of our European coalition partners who pay such extraordinary, higher prices than we do for oil, and who not only cannot understand our pricing system but cannot understand our profligacy with respect to it.

Now I would like just to draw attention to one other fact, if I may, Mr. Chairman.

We, I believe, have an oil import dependency which, coupled with automobiles, accounts for about 55 percent of our total trade deficit, that is just oil itself. If you combine that with automobiles, such that you have the totality of that addiction, if you will, we actually have a national trade surplus in the United States. This says a lot about where the imbalance currently is.

Now, it seems to me that you have to recognize that, even if you increase domestic production, the domestic production is not exempt from the rise in oil prices.

We saw what happened to the economy of this country when the price of oil went up to $40 a barrel. So we have to recognize that, with the possibilities of increased prices down the road, domestic oil production does nothing to resolve the larger economic problems of this dependency.

As you cited and we argued last year, the auto industry continually comes back with the very same arguments that were made years ago. They are the very same arguments, verbatim. We were told by Ford and by GM and others that large cars would totally disappear if the 100 percent increase that was imposed 15 years ago was put into place.

Not only did big cars not disappear, but the 100 percent increase that was demanded at that time was met within that period of time. And we should congratulate the auto industry for doing that.

But the point is that we all understand with the technology capacity that we have and that we know is already on the shelf that we can meet these standards.

The savings of this bill, the 2.8 million barrels of oil per day, is 4 times the amount of oil that we import from Kuwait and Iraq on an annual basis.

If that does not send a message to Americans, I don't know what will.

So, Mr. Chairman, I hope that we are going to break this log jam this year. I hope we are going to move to a policy that includes conservation. And I am absolutely convinced of this as I talk to people in my State and others around the country, and particularly to families.

I met with a support group recently in Massachusetts, and I was struck by the fact that every one of the families there, all of whom support Desert Storm, each of whom is saying that they understand the risks that their loved one—either

husband, son, or daughter in some cases—runs, each of them said: Senator, I don't understand why we're not being asked to sacrifice. I don't understand why Americans are going about their business as usual, without any sense of urgency about the need to do something about conservation.

I am positively convinced that if the President were to ask the country for that sacrifice, it would be forthcoming with an understanding of what the stakes are.

So I hope we are going to use this as a moment of movement and really recognize what is at stake here in terms of global warming, in terms of air quality, health on a daily basis, the health care system of this country, consumer spending, a $2,000 saving for one car, versus the $500 it might cost the industry for that particular car.

I think this is a fight that we have to press perhaps without the pressures that we had last year on the floor of the Senate.

I congratulate you for making this effort.

Senator BRYAN. Senator Kerry, thank you very much for your leadership.

We are joined by another Member of the Consumer Subcommittee, Senator Ford, this morning.

Let me yield to you for any statement you care to make, Senator.

OPENING STATEMENT BY SENATOR FORD

Senator FORD. Since I am outnumbered three to one today, let me say this.

You know, I was just sitting here thinking, after listening to the three statements. Senator Jennings Randolph, always, whenever we got around to energy, talked about why we never did anything about it. In 1944, he flew from Charleston, West Virginia, to Washington National Airport in a single engine aircraft. The oil in that engine was made from coal.

We continue to talk about it. We continue to talk about sacrifice. Sacrifice for what? For increased costs in automobiles? I don't think you will find that.

Can you sacrifice and see a result? Then I think you will get sacrifice.

I am concerned that we are all now jumping on the bandwagon that we need to conserve, that we need to do something about energy self-sufficiency. Those of us who fought it back in 1980 know, and the distinguished Senator from Washington talks about how President Reagan made the great statement about how important it is, that he is the guy who cut the thing off at the knees. We had authorized $80 billion, we had appropriated $20 billion, and we were beginning to move as it related to energy self-sufficiency for this country. Then we went to the marketplace, and that has been the attitude of the Republican administration, marketplace and deregulation, and oil seemed to be in real trouble.

We had an energy program underway, and the marketplace did not do the job. If there has ever been a signal, all you have to do is look at the deficit and the balance of trade. As my distinguished friend from Massachusetts says, 50 percent of our deficit in the balance of trade has been energy. In 1989, it was $50 billion.

And so, if you take $50 billion with Japan, the deficit with the rest of the world is only $8 billion.

So our energy problem is now at 54 percent, and for the last 10 years we have had an energy strategy in this country of imports.

Now we are asking our young me and women to die on the sands of Saudi Arabia, Kuwait, and wherever to defend imports. It's about time we did something about it.

If nothing else comes out of this, maybe we can have the emotion of the country, as Senator Kerry says, for sacrifice. But I think we have to give them a package. We cannot just piecemeal it.

And so, I would be very interested in this. I think the editorial today in one of my papers in Kentucky said, "Bush surrenders." "President gives in on energy without a whimper."

And so, the energy strategy that has been sent to the Hill is really not an energy strategy.

The first paragraph says that, "When it comes to foreign affairs, George Bush is a tail-kicking, name-taking kind of guy. Just ask Noriega or Saddam Hussein." But when it comes to standing up, to take a tough stand as it relates to the energy problems in this country, which has brought us to this point, he is unwilling to take a tough stand.

I think it is up to Congress to do it and to send him something that will be meaningful.

With that, Mr. Chairman, I want you to look at the bill. Maybe we can improve on it. But the Democrats offered, under the auspices of Senator Johnston, Chairman of the Energy Committee, an energy strategy that includes CAFE standards. It includes conservation. It includes the things that will tie in, as Senator Kerry has said.

So I think we have to be very careful that under the circumstances, when we have an energy strategy, we do not lean on one weak reed, and that we have a whole strategy.

I intend to work as hard as I can to see that we develop a CAFE standard that would be meaningful and that industry can live with. But on the other hand, I want it to be reasonable, and I intend to do what I can because I have been, since 1972, a strong advocate of new sources of energy.

We have the best laboratory in the country, I think, for the use of synthetic natural gas and liquids coming from coal. We are the lab that analyzes all the prospective, new procedures, and we think it is a compliment to our State. So we have not been sitting idly by.

It is disheartening to see what has happened in the last 10 years and to see what is happening now, based on our lack of an energy policy.

So, Mr. Chairman, I want to work with you and I intend to work with you. I wish I could stay for these hearings, to listen to our witnesses. But, as usual, I have three hearings today. If you had not started at 8:30, I probably would not have been able to make it.

I want to compliment you for being an early riser.

I have been here since 7 o'clock and have been anxious waiting for you to open the door so I could get here.

Thank you, Mr. Chairman.

Senator BRYAN. Thank you very much, Senator Ford. Perhaps, under your inspired example, we could begin these hearings even earlier.

Is that the thrust of your suggestion?

Senator FORD. Senator Bryan, if you'll be here, I'll be here.

Senator BRYAN. You got it.

Senator FORD. I want to tell you, when I walked in this morning the second time, people were lined up all the way down to the Plastic Palace. Now, if you think that the lawyers downtown have not been hired for this bill, you have really created an economic boon.

Senator BRYAN. Some have even referred to it as the "lawyers full employment act," Senator. I don't know if that's true or not.

Senator FORD. I'm not sure about that. But we certainly have a lot of employees in the automobile industry that are concerned about this, too. I hope when they testify today that it is not from the lack of the ability to produce an

automobile. As my friend from Massachusetts said, it may be on the shelf and we just need to bring it off and to put it into the marketplace.

So I hope you will listen to those people. As you know, 61,000 were furloughed last week in the auto industry. So it is developing into a real economic problem for the country.

Senator BRYAN. Thank you very much, Senator.

I would note that we have been joined by Senator Kasten. Let me yield now to him for an opening statement.

OPENING STATEMENT BY SENATOR KASTEN

Senator KASTEN. Mr. Chairman, thank you.

Environmental and political conditions underscore the need to improve the efficiency with which we use energy. Those improvements need to be made in all the ways we use energy. Be it least cost energy planning, more efficient heating and cooling of our buildings or transportation efficiency, there is much we must and can do.

I believe it is important that we adopt a strengthened CAFE policy—and that we do it this year.

However, I believe the bill that this committee reported out last year was seriously flawed, and that adoption of that particular legislation is not in the nation's interest.

Let me elaborate just briefly.

I believe it is unrealistic to mandate a 40 percent increase in CAFE standards and expect the American people to purchase the kind of cars we would be able to produce in this country in the timeframe we are considering.

First, it is critical that what we legislate be achievable.

We need to set standards that not only are technically feasible, but which are embraced by the American consumer in the cars they select to purchase. I believe both of these points are in question.

Even if we can mass produce cars that get 40 percent better mileage, the purchasing preference of the American consumer may not select those cars.

Second, it is critical that we continue to build the kind of cars Americans want here in this country. We should not legislate guidelines that domestic producers will have greater difficulty fulfilling than offshore competitors.

Third, we are already adopting multiple regulations that will set energy efficiency back. We are already phasing out CFCs for airconditioners. This means that less efficient substitutes will have to be used that will reduce mileage.

The Clean Air Act contains numerous emission reduction requirements that will also reduce mileage efficiency.

At the same time we are adopting new safety requirements that will add weight to autos and reduce mileage.

Like in Alice in Wonderland, we are having to run to stay in the same place.

So what kind of CAFE policy should we have?

First, I believe we should have a scientifically based policy. The National Academy of Science is due to issue its first report on a feasible CAFE standard this summer. We do not have to be bound to that data, but certainly should consider it before adopting regulations.

The failure to recognize what is technically feasible and acceptable to the marketplace guarantees the failure of a program.

Second, we should look at incentives to get less efficient vehicles off the road and replaced with state of the art vehicles.

Third, we should have CAFE numbers that accurately reflect the mileage that autos actually get. This "truth in claim" provision should be incorporated as part of our update on CAFE standards.

It is critical that we continue to build the kind of cars Americans want to purchase in this nation. We need to increase efficiency to meet that demand, but we must also remember the other needs of the car buying public. We should adopt a CAFE policy that meets these criteria this year.

Senator BRYAN. I have opening statements from Senators Hollings and Riegle that I will include in the record.

[The statements and bill follow:]

OPENING STATEMENT BY THE CHAIRMAN

This hearing today continues the work we began in the 1970s on fuel economy for the passenger vehicle fleet. I am pleased to be an original cosponsor of the legislation to be discussed today, S. 279, to require increased fuel economy in passenger vehicles. I also was an original cosponsor of S. 1224, which had the support of a majority of the Senate in the last Congress.

In 1975, I cosponsored legislation that established the current cafe standards. At the time that legislation was proposed, it was an untested and unprecedented plan. However, we believed we could effectively promote national energy security by mandating that the passenger vehicle fleet achieve a certain fuel economy.

To continue that work is just as important today, as we are continually reminded by news from the Persian Gulf. Imported oil is often over 50% of consumption. Of equal concern to me is the fact that energy imports are major contributors to our intolerably high trade deficit, adding almost $40 billion per year.

In addition to the ongoing, and increasing, problem of National Energy Security, we have another reason to continue the progress in fuel efficiency—the threat of global warming. Every gallon of gasoline that is burned emits almost 20 pounds of carbon dioxide, and we know that carbon dioxide is a primary contributor to global warming. While all the consequences of the warming that is predicted are not yet known, we are certain that concentrations of carbon dioxide are increasing, and we must reverse that trend.

At the time this issue was first discussed in the 1970s, the automobile industry made certain predictions about the consequences of the legislation for the U.S. economy and the consumer's choice of vehicles. It was suggested then that, if we adopted the standards that are now law, everyone would have to drive a vehicle the size of a Ford Pinto. Of course, the events of the last decade have proven that the automobile industry has the ability to meet such a challenge.

I am glad we were not deterred by those predictions, and that we proceeded to legislate fuel economy standards, which have made a significant contribution to energy conservation. They have resulted in a doubling of the fuel economy of the fleet without any loss of interior size or performance of the vehicles. It is estimated that these improvements in fuel economy save 2.5 million barrels of oil per day, and save the consumer at least $40 billion per year in gasoline costs.

We must continue the important work of the last decade to address the serious energy and environmental problems we face. I look forward to the testimony of our witnesses on this issue today.

OPENING STATEMENT BY SENATOR RIEGLE

Mr. Chairman. I want to thank the Committee for allowing me this opportunity to address you regarding S. 279, the Motor Vehicle Efficiency Act of 1991.

The war with Iraq has pushed energy policy into the national spotlight once again. The Congress and the President have put forward plans to reduce our reliance on foreign oil. While there is no question that we need a strong energy policy and despite the understandable urge to do something quicky, it would be a mistake for the Committee to move forward rashly with this particular bill.

It is vitally important for the committee to remember that the auto industry is being hit hard by the current recession as well as two new government mandates. The auto industry is currently in no position to undertake a another major government initiative. New CAFE requirements would add a third layer of costly, government mandated design requirements in less than a year. Early last year, Congress passed major new safety requirements in the National Highway Safety Administration Authorization bill. Also last year, we adopted the most sweeping clean air legislation since 1977 which imposes new, very stringent emission controls. These two requirements will require massive engineering investments. CAFE would simply pile on another group of problems for, and drain financial resources from, an industry experiencing serious difficulties.

Automobile manufacturers have made great strides in fuel economy performance over the last 15 years. The fleet average has doubled from around 14 MPG to 28 MPG. That is an astounding success.

Most of this progress came as a result of removing weight from cars. The average car is almost 2,000 lighter than cars built in 197S. Proponents of this bill say we can make similar gains with exizting technology and without further weight reductions. The fact of the matter is that we don't really know whether a huge improvement is technologically possible again.

It is difficult to see how fuel economy can be drastically improved without downsizing the current automobile. It has not been conclusively determined that the standards in S. 279 are feasible without downsizing or massive industry disruption as the sponsors claim. The fuel economy numbers in the study by K.G. Duleep, so often quoted by supporters of this bill, have been questioned by the author himself. Furthermore, S. 279 goes even further, asking the industry to achieve standards that even the most optimistic studies say can not be achieved without downsizing. In fact, the question of the what the industry can do without downsizing has not been conclusively answered.

This question of downsizing is vitally important to the CAFE debate. Larger cars are safer cars. If we can not achieve very high standards without taking weight out of the automobile, S. 279 will have an effect on safety. Consumers want to put themselves and their families into the safest cars possible. An overwhelming majority of car buyers place safety among their highest concerns when purchasing a car. Last year the Insurance Institute for Auto Safety found that "fuel economy standards create safety problems if they force automakers to make cars smaller in order to increase the average miles per gallon of their fleets." That is why NHTSA has asked the National Academy of Sciences to study what really can be done to improve fuel economy without greatly altering the size and desirability of automobiles. 'We are now waiting for a comprehensive study that will determine what level of fuel economy is achievable with current technology. This study will have a broad focus. It will look at issues like safety, the financial challenges of new standards, consumer demand and other factors that will determine what level of CAFE makes sense. Why should we rush ahead with a bill that establishes fuel economy standards that many think are not achievable without sacrificing safety and consumer choice, when a major independent study is currently underway?

The bill before us today is not the answer to our need for a National Energy strategy. Eighteen years after the first oil crisis, petroleum is still the lifeblood of the entire economy—not just the automotive sector. A bill affecting only one sector is no substitute for a comprehensive and coherent national energy policy. New tougher CAFE standards should be examined in the context of a comprehensive energy policy bill. Trying to achieve significant energy conservation on a sector-by-sector basis will result in a divisive battle on regional and industry specific lines. The people of my state have already made a tremendous contribution to energy conservation and clean air and I am very concerned about the impact CAFE will have on American auto workers. The auto industry has doubled fuel economy, and cut tailpipe emissions dramatically. The industry will do more to clean our nations air, and we all share the task of conserving energy. However, I can not support a bill that fails the test of common sense. Until we know more about what the industry can do and remain a viable industry in this country—we should not ask them take drastic steps to alter their product. The result will be a delay or lost opportunity in enacting a national energy policy. I urge the committee to delay mark up on this bill until the National Academy of Sciences completes its study, and the Senate begins to work on a comprehensive package of energy legislation that looks at the whole problem of reducing our dependence on foreign oil and improving energy conservation.

102D CONGRESS
1ST SESSION

S. 279

To amend the Motor Vehicle Information and Cost Savings Act to require new standards for corporate average fuel economy, and for other purposes.

IN THE SENATE OF THE UNITED STATES

JANUARY 29 (legislative day, JANUARY 3), 1991

Mr. BRYAN (for himself, Mr. GORTON, Mr. HOLLINGS, Mr. MITCHELL, Mr. ADAMS, Mr. BENTSEN, Mr. BUMPERS, Mr. CHAFEE, Mr. COHEN, Mr. CONRAD, Mr. D'AMATO, Mr. DASCHLE, Mr. DECONCINI, Mr. DODD, Mr. FOWLER, Mr. GORE, Mr. GRAHAM, Mr. HEINZ, Mr. KERREY, Mr. KERRY, Mr. LAUTENBERG, Mr. LEAHY, Mr. LIEBERMAN, Mr. MCCAIN, Mr. METZENBAUM, Ms. MIKULSKI, Mr. MOYNIHAN, Mr. PELL, Mr. REID, Mr. ROBB, Mr. RUDMAN, Mr. SANFORD, Mr. SIMON, Mr. WELLSTONE, and Mr. WIRTH) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

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A BILL

To amend the Motor Vehicle Information and Cost Savings Act to require new standards for corporate average fuel economy, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SHORT TITLE

SECTION 1. This Act may be cited as the "Motor Vehicle Fuel Efficiency Act".

FINDINGS

SEC. 2. The Congress finds and declares the following:

(1) Improved efficiency in the consumption of petroleum is vitally important, not only because the worldwide supply is finite, but because the increasing dependence of the United States on foreign oil is a threat to our national security and adversely affects the trade balance.

(2) The light duty vehicle fleet is a significant user of oil, accounting for about 39 percent of United States oil consumption.

(3) Improvements in vehicle fuel efficiency between 1973 and 1987 amounted to a savings of 2.5 million barrels of oil per day and a savings to drivers of at least $40,000,000,000. Conversely, the rollback of the corporate average fuel economy (CAFE) standard for the 1989 model year, from 27.5 miles per gallon to 26.5 miles per gallon, is expected to result in increased consumption of 900 million gallons of fuel over the life of the 1989 vehicles.

(4) Emissions of carbon dioxide, including those from the light duty vehicle fleet, contribute substantially to increased retention of heat in the Earth's atmosphere, and may cause long-term global warming and disruption of climate-dependent activities.

(5) The United States, with only 5 percent of the world's population, is responsible for 20 percent of world carbon dioxide emissions. United States carbon dioxide emissions from gasoline alone are greater than the carbon dioxide emissions from all sources in each of the following countries and areas of the world: Latin America, Japan, the Middle East, West Germany, South and Southeast Asia, the United Kingdom, Africa, and France.

(6) The transportation sector is responsible for 31 percent of carbon dioxide emissions in the United States. Each gallon of gasoline burned results in the emission of 19.7 pounds of carbon dioxide.

(7) The rollback of the CAFE standard for the 1989 model year is projected to result in 9 million tons of additional carbon dioxide emissions during the life of the 1989 vehicles.

(8) Increased numbers of vehicles and vehicle miles traveled in the United States will necessitate a 3 percent annual increase in fuel efficiency merely to hold future carbon dioxide emissions at current levels. Therefore, substantial improvements in vehicle fuel efficiency will be needed to reduce these emissions.

(9) CAFE standards and the successful response of automobile manufacturers to those standards have

been very effective in increasing vehicle fuel efficiency, resulting in a doubling of the passenger car fleet fuel economy between 1975 and the present. However, current law does not require improvement above a standard of 27.5 miles per gallon which became effective in 1985. In recent years, the average fuel economy of the fleets of many manufacturers has actually declined, while the size and horsepower of the fleets have increased.

(10) Between 1988 and 1990, there was a 4 percent decline in miles per gallon in the passenger car fleet sold in the United States, while horsepower increased by an average of 10 percent and weight increased by 6 percent. Technology that could improve fuel economy has been used instead to increase vehicle horsepower. Increases in horsepower not only have reduced fuel economy, but also add to the risk of increased highway deaths and injuries by encouraging excessive vehicle speed.

(11) Vehicles such as small pickup trucks, vans, and jeeps were an insignificant part of the passenger vehicle market when CAFE standards were enacted in 1975, and have not been subjected to strict, legislatively-established, CAFE standards. As a result, there have been few major technological changes related to

the fuel efficiency of such vehicles since 1982. The fleet fuel economy for these vehicles has not increased in the last decade, and fuel economy of some of these vehicles has actually declined between 1982 and 1986. They have become increasingly popular for passenger use, and such vehicles now account for approximately one-third of new passenger vehicle sales.

(12) The Office of Technology Assessment and the Department of Energy agree that increased fuel efficiency is possible utilizing currently available technology and without significant changes in the size, mix, or performance of the fleet.

(13) With appropriate lead time, by utilizing technology currently in production, passenger car fleet fuel economy of between 38 and 45 miles per gallon has been estimated by various experts to be feasible without significant changes in vehicle size or performance. When technology currently in development becomes available, even higher levels of fuel economy are possible.

(14) Despite recent increases in gasoline prices and Federal gasoline taxes, there is no evidence that the current market alone will achieve significant improvement in fuel economy.

(15) An increase in fuel efficiency in the light duty vehicle fleet of 20 percent by 1996 and 40 percent by 2001 would save 2.5 million barrels of oil per day by 2005. This is over 8 times the amount of oil expected to be available through drilling in the Arctic National Wildlife Refuge, and almost 4 times the amount of oil imported from Iraq and Kuwait prior to the Iraqi invasion of Kuwait. This level of improvement also would reduce carbon dioxide emissions by 440 million tons per year by 2005.

(16) Use of a percentage improvement requirement is the only legislative approach currently available that assures achievement of the environmental and energy security goals to be served by a fuel efficiency standard. Such an approach ensures that each manufacturer is required to achieve significant improvement in fuel efficiency. By contrast, use of the same numerical standards for all manufacturers provides no incentive for manufacturers of primarily small vehicles to improve the fuel efficiency of those vehicles, and in effect establishes no standard for such manufacturers. The separate size or weight class standards presently available do not, standing alone, prohibit increases in the size and weight of the fleet as a whole, and so do

not ensure that fuel savings actually will result from such standards.

(17) Increased CAFE standards that require all manufacturers to improve by the same percentage are, therefore, both reasonable and necessary to ensure that improvements in fuel efficiency continue, in furtherance of the dual goals of the Nation's energy security and decreased carbon dioxide emissions.

AVERAGE FUEL ECONOMY STANDARDS

SEC. 3. (a) Section 502(a)(1) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2002(a)(1)) is amended by striking:

"1985 and thereafter	27.5."

and inserting in lieu thereof the following:

"1985 through 1995	27.5.
1996 and thereafter	As provided in accordance with section 514 of this Act.".

(b) Section 502(a)(4) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2002(a)(4)) is amended by striking "The Secretary" and inserting in lieu thereof "Except in the case of standards established by section 514, the Secretary".

LIGHT TRUCKS

SEC. 4. Section 502(b) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2002(b)) is amended by inserting "and which ends before model year 1996" immediately after "after the date of enactment of this title".

EXEMPTIONS FOR LIMITED PRODUCTION

SEC. 5. Section 502(c)(1) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2002(c)(1)) is amended—

(1) by striking "passenger" each place it appears;

(2) by inserting "or (b), or section 514 or 515" immediately before the period at the end of the first sentence; and

(3) by inserting "or (b), or section 514 and 515," immediately before "is more stringent".

EMERGENCY VEHICLES

SEC. 6. Section 502(g)(1) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2002(g)(1)) is amended by inserting "or section 514 or 515" immediately before the period at the end of the first sentence.

CONSULTATION

SEC. 7. Section 502(i) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2002(i)) is amended by inserting "sections 514 and 515" immediately before the period in the first sentence.

NOTIFICATION

SEC. 8. Section 502(j) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2002(j)) is amended by inserting "and sections 514 and 515" immediately before "or any modification".

NEW STANDARDS

SEC. 9. (a) Title V of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2001 et seq.) is amended by adding at the end the following new sections:

"PASSENGER AUTOMOBILES

"SEC. 514. Notwithstanding any other provision of this Act, the average fuel economy for passenger automobiles manufactured by any manufacturer in model year 1996 and each model year thereafter shall not be less than the number of miles per gallon established for such model year pursuant to the following:

"Model year:	
"1996 through 2000	For each such manufacturer, the average fuel economy required shall be an amount determined by the Secretary to be equal to the average fuel economy achieved by that manufacturer for passenger automobiles in model year 1988, plus an amount equal to 20 percent (as measured in miles per gallon) of such average fuel economy achieved for model year 1988, unless such standard is modified under such standard shall not be less than 27.5 miles per gallon and shall not exceed 40 miles per gallon.
"2001 and thereafter	For each such manufacturer, the average fuel economy required shall be an amount determined by the Secretary to be equal to the average fuel economy achieved by that manufacturer for passenger automobiles in model year 1988, plus an amount equal to 40 percent (as measured in miles per gallon) of such average fuel economy achieved for model year 1988, unless such standard is modified under section 516; except that such standard shall not be less than 33 miles per gallon and shall not exceed 45 miles per gallon.

"AUTOMOBILES OTHER THAN PASSENGER AUTOMOBILES

"SEC. 515. Notwithstanding any other provision of this Act, commencing with model year 1996 and each model year thereafter, the average fuel economy for automobiles other than passenger automobiles manufactured by any manufacturer in any such model year shall not be less than the number of miles per gallon established for such model year pursuant to the following:

"Model year:	
"1996 through 2000	For each such manufacturer, the average fuel economy required shall be an amount determined by the Secretary to be equal to the average fuel economy achieved by that manufacturer for light trucks in model year 1988, plus an amount equal to 20 percent (as measured in miles per gallon) of such average fuel economy achieved for model year 1988, unless such standard is modified under section 516; except that such standard shall not be less than 20 miles per gallon and shall not exceed 30 miles per gallon.
"2001 and thereafter	For each such manufacturer, the average fuel economy required shall be an amount determined by the Secretary to be equal to the average fuel economy achieved by that manufacturer in model year 1988, plus an amount equal to 40 percent (as measured in miles per gallon) of such average fuel economy achieved for model year 1988, unless such standard is modified under section 516; except that such standard shall not be less than 24 miles per gallon and shall not exceed 35 miles per gallon.

"MODIFICATIONS OF STANDARDS

"SEC. 516. (a)(1) The Secretary may modify any average fuel economy standard established under this Act for

model year 1996 and thereafter in accordance with this section. In response to a petition from any person that is filed at least 12 months in advance of the model year to which it is applicable, the Secretary shall conduct a rulemaking proceeding to determine whether to increase or decrease such standard to the level which the Secretary determines is the maximum feasible average fuel economy for that model year (taking into consideration the factors listed in section 502(e) and the need to reduce carbon dioxide emissions). The Secretary may also conduct such a rulemaking proceeding on the Secretary's own initiative.

"(2)(A) Under such proceeding, the Secretary shall not reduce any such standard below a level equal to the average fuel economy achieved by the manufacturer involved for the applicable type (or class) of vehicles for model year 1988, as multiplied by the applicable percentage set forth in subparagraph (B).

"(B) The applicable percentage referred to in subparagraph (a) is—

"(i) 115 percent, for model years 1996 through 2000; and

"(ii) 130 percent, for model years 2001 and thereafter.

"(b)(1) In determining the maximum feasible average fuel economy during a rulemaking proceeding under this sec-

tion, the Secretary shall weigh equally each factor listed in section 502(e) and the need to reduce carbon dioxide emissions.

"(2) In evaluating the technological feasibility of the standard, the Secretary shall exclude consideration of vehicles whose power-to-weight ratio exceeds the average power-to-weight ratio of the model year 1988 fleet, as defined and determined by the EPA Administrator and furnished to the Secretary.

"(3) In evaluating the economic practicability of the standard, the Secretary shall consider—

"(A) the economic impact of the standard on the manufacturers and on the consumers of the vehicles subject to such standard;

"(B) the savings in operating costs throughout the estimated average life of the vehicle compared to any increase in the price of, or in the initial charges for, or maintenance expenses of, the vehicles which are likely to result from the imposition of the standard;

"(C) the total projected amount of energy savings likely to result directly from the imposition of the standard and the economic impact of such energy savings;

"(D) any lessening of the utility or the performance of the vehicles likely to result from the imposition of the standard;

"(E) the impact of any lessening of competition or any change in foreign trade that is likely to result from the imposition of the standard;

"(F) the total projected amount of reduction in carbon dioxide emissions and the economic impact of such reduction; and

"(G) other factors the Secretary considers relevant.".

(b)(1) Section 503(a)(1) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2003(a)(1)) is amended by inserting "and section 514" immediately after "and (c)".

(2) Section 503(a)(2) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2003(a)(2)) is amended by adding at the end the following: "Average fuel economy for purposes of section 515 shall be calculated in accordance with rules of the EPA Administrator that are based upon the method required in paragraph (1) for calculation of average fuel economy of passenger automobiles.".

FUEL ECONOMY TESTING

SEC. 10. (a) The Administrator of the Environmental Protection Agency shall conduct—

(1) an ongoing examination of the accuracy of fuel economy testing of passenger automobiles and light

trucks by the Administrator performed in accordance with procedures in effect as of the date of enactment of this Act, as compared to the actual performance of such passenger automobiles and light trucks when driven by average drivers under average driving conditions in the United States; and

(2) an assessment of the extent to which fuel economy deteriorates during the life of such passenger automobiles and light trucks.

Information on actual performance may be obtained through a survey of current vehicle owners.

(b) The Administrator shall, within 12 months after the date of enactment of this Act and annually thereafter, submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Energy and Commerce of the House of Representatives a report on the results of the study required by subsection (a) of this section. The report shall include—

(1) a comparison between (A) fuel economy measured, for each model in the applicable model year, through testing procedures in effect as of the date of enactment of this Act and (B) fuel economy of such passenger automobiles and light trucks during actual on-road performance, as determined under subsection (a) of this section;

(2) a statement of the percentage difference, if any, between actual on-road fuel economy and fuel economy measured by test procedures of the Environmental Protection Administration; and

(3) any recommendations for legislative or other action.

EXPLANATORY BOOKLET DISTRIBUTED BY SECRETARY OF ENERGY

SEC. 11. (a)(1) Paragraph (1) of section 506(b) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2006(b)) is amended by adding at the end the following new sentence: "The Secretary of Energy shall distribute no less than 100 booklets each year to each dealer and shall distribute as many in addition to 100 booklets as are reasonably requested by dealers from time to time.".

(2) The amendment made by paragraph (1) of this subsection shall apply to the 12-month period beginning on the first day of the first month after the date of enactment of this Act and corresponding 12-month periods thereafter.

(b) Section 506(e) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2006(e)) is amended by striking "Federal Energy Administrator" and inserting in lieu thereof "Secretary of Energy".

STUDIES

SEC. 12. (a) The Secretary of Transportation shall provide for a review to be undertaken by the National Academy

of Sciences, in consultation with vehicle manufacturers, representatives of environmental and consumer groups, appropriate State and local officials, representatives of labor, and others as appropriate, of the current state of research and development in light truck fuel economy and passenger automobile fuel economy and an assessment of the remaining potential for improving the fuel efficiency and reducing the energy consumption of passenger automobiles and light trucks. The assessment shall include all aspects of vehicle design, including engines, drive train, component parts, auto body, tires, and any other aspect contributing to the reduction of energy consumption. The National Academy shall, not later than 2 years after the date of enactment of this Act, submit a report to the Congress on the results of the review and assessment and in the report recommend research and development priorities that could result in the commercialization of fuel economy technology through the early years of the next century. The National Academy shall update the report every 5 years, beginning not later than 7 years after the date of enactment of this Act, and shall submit each updated report to the Congress.

(b) The Secretary of Energy, in consultation with the Secretary of Transportation and the Administrator of the Environmental Protection Agency, shall undertake a study of future options for regulating the fuel efficiency of passenger

automobiles and light trucks beyond the year 2001. Such study shall utilize the results of the review and assessment required by subsection (a), and shall examine alternative forms of fuel economy regulations. The study shall determine—

(1) the ability of each regulatory strategy to ensure continued future fleet fuel economy improvements;

(2) the economic efficiency of each such strategy; and

(3) the impact of each such strategy on the competitiveness of the United States economy.

The Secretary of Energy shall, not later than 3 years after the date of enactment of this Act, submit a report to the Congress on the results of the study required by this subsection.

JUDICIAL REVIEW

SEC. 13. Section 504(a) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2004(a)) is amended by striking "or 506" and inserting in lieu thereof "506, 514, 515, or 516".

VIOLATIONS OF AVERAGE FUEL ECONOMY STANDARD

SEC. 14. (a) Section 508(b)(1) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2008(b)(1)) is amended by adding at the end the following new subparagraph:

"(C) Any civil penalty assessed under this subsection for a violation of section 507(a)(1) or (2) in model year 1996 or thereafter against a manufacturer shall be doubled if—

"(i) the manufacturer violated section 507(a)(1) or (2) in the two model years immediately preceding the model year involved in the assessment; and

"(ii) during each of such preceding years and the year involved in the assessment, the applicable average fuel economy standard exceeded the average fuel economy of the vehicles manufactured by such manufacturer by 5/10 of a mile per gallon or more.".

(b) Section 507(a)(1) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2007(a)(1)) is amended by inserting "and section 514" immediately after "section 502(b)),".

(c) Section 507(a)(2) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2007(a)(2)) is amended by striking "section 502(b)" and inserting in lieu thereof "sections 502(b) and 515".

(d) Section 507(b) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2007(b)) is amended by adding at the end the following new paragraph:

"(7)(A) The maximum penalty amounts authorized in paragraphs (1) and (2) shall be adjusted for inflation as provided in this paragraph.

"(B) No less than 3 months prior to model year 1992, and no less than 3 months prior to each model year thereafter, the Secretary shall prescribe and publish in the Federal Register a schedule of maximum authorized penalties that shall apply for violations that occur with respect to the model year immediately following such publication.

"(C) The schedule of maximum authorized penalties shall be prescribed by increasing each of the amounts referred to in paragraphs (1) and (2) by the inflation adjustment for the preceding model year, as calculated by the Secretary on the basis of the Consumer Price Index.

"(D) For purposes of this paragraph, the term 'Consumer Price Index' means the Consumer Price Index for all-urban consumers published by the Department of Labor.".

DEFINITIONS

SEC. 15. As used in this Act, the term "passenger automobile" has the meaning given that term under section 501 of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2001), and the term "light truck" shall have such meaning as the Secretary of Transportation prescribes.

Senator BRYAN. We will begin now with our first panel. The Administrator from the agency has been kind enough to accommodate some time constraints that our first panel has. So let me ask those persons to come forward now.

We have Dr. Stephen Schneider. Dr. Schneider is the Head of the Interdisciplinary Climate Systems Section, at the National Center for Atmospheric Research.

Joining him on the panel is Mr. Stu Eizenstat of Powell, Goldstein, Frazer and Murphy. He is a former Domestic Policy Adviser at the Carter White House.

Also we have Dr. Vincent Breglio, President of Research/Strategy/Management, Inc.

Gentlemen, welcome to the subcommittee hearing.

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Dr. Schneider, as soon as you get yourself comfortably situated, we will begin with you. I would note for the record that we have written testimony and statements of each of you, which will be made a part of the full record. Let me begin with you, Dr. Schneider.

STATEMENT OF DR. STEPHEN SCHNEIDER, HEAD, INTERDISCIPLINARY CLIMATE SYSTEMS SECTION, NATIONAL CENTER FOR ATMOSPHERIC RESEARCH BOULDER, CO

Dr. SCHNEIDER. Thank you very much, Senator. It is my pleasure to be here and I appreciate the invitation.

I imagine that, as a person interested in global climate change, my job in the next few minutes is just to paint a very brief sketch of the far global reaches of the issue in which transportation in general and I guess CAFE in particular fit. The specialty that I have deals with the global warming question and the causes and implications of it.

At the first, I can say that everybody is aware of it, and I am certain if we follow the relatively noisy, and occasionally polemical, media debate, you must all have questions about just how real this issue is and what it means.

Let me assert at the outset that the media debate often disguises the very large consensus that exists in the scientific community about the greenhouse effect as a scientific issue. There is legitimate debate over the question of global warming, but virtually no scientific debate over the greenhouse effect itself.

We know that natural effects—the gasses water vapor, carbon dioxide and methane as well as clouds in the atmosphere—have the property of letting a larger fraction of sunlight through to the earth's surface than another kind of heat, so-called infrared radiation, to escape back through the atmosphere to space. That heat trapping property makes the earth something on the order of 60 degrees Fahrenheit warmer than it would be without the greenhouse gases and clouds.

In fact, we would not have evolved if it were not for that very good stuff, that natural greenhouse effect.

There is also no doubt that one of those gases, carbon dioxide, has increased by 25 percent since the beginning of the industrial revolution. We also know for certain that humans did it. It is not a natural event. It was due to the burning of fossil fuels and deforestation, both human activities. We know that we have doubled the amount of methane, another strong heat trapping gas through landfills, agricultural practices, domesticated animals, the use of coal gas and so forth. Again, there is no debate about that.

We know that gases, such as chlorofluorocarbons, originally used in spray cans but now very much involved in many industrial activities, also have been introduced. These do not exist in nature. They trap heat very effectively. They also are reducing the stratospheric ozone layer.

Again, there is little debate about that.

We know also, although it is not proven beyond doubt, though it is very likely believed, that the amount of greenhouses gases that we have added in the past 100 years or so has trapped about 2-3 extra watts of energy over every square meter of earth. Think about it as one of those little Christmas tree bulbs. Every square meter of the earth has an extra Christmas Tree bulb, except the heat is in the infrared and you cannot see it. There is very little debate about thatamount of heat being trapped.

The debate begins on how do you translate that two watts of infrared radiant energy into X degrees of temperature change. In order to do that, we have to

decide how the energy is partitioned among direct temperature rise or the evaporation of water. If you evaporate more water, do you thus change clouds? Does the system amplify the warming or is it damped by those clouds? Those are legitimate areas of debate which we often hear about and we know the uncertainties are quite real.

Another area of debate is how much extra greenhouse gases are there going to be in the future. That is not primarily a physical science question or even a biological science question. It is not only about how much deforestation is taking place now. It is a question of what will people do in the future. How much pollution will we add? This is really a product of three things.

First is technology. If you use a high polluting technology, you are going to get more pollution, obviously, than if you use a low polluting one.

The second thing is how much of it are you going to use. That has two components itself. The first component is standard of living. How much per capita use of energy, for example will there be.

Then the third one is how many capitas are there. In other words, what is the population size?

So, to forecast the future we have to forecast technology. We have to forecast standard of living and we have to forecast population. All three components drive the pollution which can affect the global state.

Now, what is the consensus that exists in the scientific community—and when I say "consensus," I do not mean that every knowledgeable scientist agrees with every detail. I am certain that it would not be a surprise to you to know that there are people with Ph.D.'s that believe in anything and say anything. It is unfortunate that they often get comparable time in the op-ed pages of newspapers to 75 scientists and National Academy of Science studies as if one or two individuals can balance them. That leads to considerable public confusion.

But the basic consensus is not that we understand the details of the global warming debate. We certainly do not. We do not know the precise timing and magnitude of changes and locations, something critical to forestry, to management of ecosystems, to agriculture, to water supplies, to what the effects on coastal storms will be, flooding, and all the scary things that you read about. All of these are potential problems but nobody responsible says that we know for sure what will happen.

On the other hand, we know that extra 2 watts is there. We know that the rate at which population technology and affluence is growing suggests that warming could be on the order of several degrees in the next century. The estimates typically range from 1 to 5 degrees Celsius, one being a typical magnitude of natural change, at the edge of what nature does by itself, on the timeframe of, say, a couple of centuries; 5 degrees being the temperature difference between an ice age and the present—quite literally a dramatic event that takes place over 10,000 year timeframes that we are threatening to produce in a century.

Now, while no one responsible will say that the 5 degree C warming is going to happen, no one responsible can say that the probabilities of it happening are remote. The ranges that you typically hear from scientists are that we'll have several degrees warming in the next century, and the lowest probability that I've heard from anyone responsible for that event is about a 20 percent chance. The highest that I've heard is a 90 percent chance.

No one is certain.

So we must not be confused by the legitimate debate that is going on about the details. But the magnitudes and rates are what have most scientists concerned. This is because changing temperature a few degrees in a century is on the order of 10 to 30 times—and if you go to 5 degrees, it's 100 times—faster than the

very large changes that nature has put on us over the past 20,000 years. It is those potentially very fast rates of change which threaten ecosystems.

For example, an official of the Office of Management and Budget once said that a 3 degree temperature change is like getting off a Boston flight in Washington. Indeed, we could use that argument.

But the trees of Virginia cannot call the van lines to move millions of them up to Massachusetts. It takes nature thousands of years to accomplish that. That is what worries most of us, the potential for the fast rates of change of climate.

Now, let me address the transportation question.

Many people would agree that, given the uncertainty and the potential for fast rates of change, would not the best policy be to slow this prospect down? That way we could buy time to assess how serious the problem was. We could buy time for nature to adapt and buy time for humans to adapt. After all, change per se is not the problem. It's rapid change.

Let me add that in my written testimony I have pointed out that about one-third of the U.S. emissions of greenhouse gasses are due to buildings, one-third is due to industry and about another third is due to transportation. Automobiles are roughly half, a little less than half, of the carbon dioxide emissions of the transportation sector.

If you look at studies which I have referred to in tables in my written testimony, there are two of them now, one at the National Academy of Sciences, which suggests that technology alone could reduce emissions of CO2 something on the order of 0.3 billion tons a year. I heard you suggest earlier that it was around 400 million. These numbers are comparable. It's something on the order of 6 percent of our CO2 emissions, about 3 percent of the heat trapping potential of our total greenhouse gas emissions.

But what was so important in the National Academy Study is that it pointed out that these emissions cuts can be made at less than zero cost. When they say "less than zero cost," it does not mean that it won't cost money to do it. What it means is that if you look at the average lifetime of a car and the cost of energy, and you figure the saving that you would get by using less energy, and you weigh that off against the increased price, and you discount it, you still come out ahead. The problem is that it's different people who often come out ahead than those who initially lose. As you know, those perceived loses can cause part of the political debate.

Those technology forcings which can yield 0.3 billion tons CO2 savings include improved transmissions, improved engines, improved paints which reduce friction, and so forth. The problem then is why don't we have them anyway if they are so cost effective?

The answer is that we do have them. But they come very slowly. They come slowly because they need forcing. People just simply have very short-term horizons. With the larger issues that were raised by all of you this morning, in addition to the environmental question and the security questions, I think some regulatory forcing is helpful.

The Office of Technology Assessment just recently completed a study which suggests that if one forces the technology through standards, such as CAFE, then you can have, perhaps, 10 percent cuts in the U.S. CO2 emissions in the transportation sector. But that will not be done at zero cost. That goes above the zero cost line. How far to go is obviously the difficult question.

Finally, let me say that when one increases the standards, that will require in some cases a reduction of horsepower, for example. I have seen curves showing how horsepower used to be very high. We all remember those cars in the 1950's

and 1960's, and then in the 1970's the numbers started to come down. Then again in the 1980's, they have been going back up.

An industry analyst once remarked that power corrupts, but horsepower corrupts absolutely.

The problem that we have, then, is two-fold. One is how do we force the technology that will get us more efficient quickly, that is cost effective. Second is the question about fundamental changes in style.

From my perspective, personally speaking, now, I think we need a mixture of both and therefore I applaud your efforts in this direction.

Thank you.

[The statement follows:]

STATEMENT OF STEPHEN H. SCHNEIDER, NATIONAL CENTER FOR ATMOSPHERIC RESEARCH

Global warming has become, so to speak, the hottest topic in environmental conservation as the last decade of the 20th century begins. Yet, the problem is not new, for the capacity of gases in the atmosphere such as water vapor, carbon dioxide, methane, nitrous oxide to trap the earth's infrared radiative heat near the surface has been known for over 150 years. It was also speculated in the late 19th century that human industrial energy produced largely by fossil fuels, an inevitable byproduct of which is the production of carbon dioxide gas, would lead to a buildup of that gas in the atmosphere thereby adding to the natural greenhouse effect—which is well known to be responsible for about 330 Celsius (600 Fahrenheit) of natural "greenhouse" warming. It is also well known that since the industrial revolution, human activities (mostly fossil fuel burning but perhaps 40% from deforestation) has led to a 25% increase in carbon dioxide, 100% increase in methane, and the introduction of manmade chemicals such as chlorofluorocarbons (CFCs). This gas is also implicated in the creation of the ozone hole and the reduction of stratospheric ozone. Furthermore, it is also not controversial that these gases have trapped about two watts per square meter of extra radiative energy near the earth's surface since the industrial revolution, equivalent to the power of a small Christmas tree bulb in every square meter of earth. What is controversial, however, is how to translate that extra two watts of heating into "X degrees" of temperature rise, since this involves yet unverifiable assumptions about how the heating will be distributed among temperature rise, evaporated water, melted ice, altered soil moisture, cloudiness, etc. These "feedback processes" make our estimates of climatic warming from the buildup of greenhouse gases uncertain to about a factor of three. Most assessments, including the recent 200-scientist-U.N.-sponsored Intergovernmental Panel on Climate Change, have concluded that a warming of several degrees is quite likely by the middle of the next century and that a warming of four or more degrees C is possible by the end of the next century. Human civilization, which developed over the past 10,000 years, has not experienced a planet more than one to two degrees warmer than present, and a four-degree warming nearly equals the temperature difference between the end of the last ice age and the present interglacial epoch, a time that literally revamped the ecological face of the earth. Since those transitions in nature typically take 5,000 to 10,000 years, a climate change of several degrees in a century is at least 10 times, and perhaps 100 times, more rapid on a globally sustained basis than average natural change. This raises the spectre of considerable disruption to natural ecological systems, human agriculture and water supplies, threatens to raise sea levels or intensity hurricanes, and could cause unknown alterations to human and animal health.

Although it is premature to predict precisely how these changes might be translated into regional alterations in rainfall patterns, estimates of societal and ecological disruptions have ranged from mildly beneficial to catastrophic. These then lead to substantial controversy over whether humans should invest resources now to hedge against these plausible outcomes or whether we should wait the 10 or so years more it will take to prove these effects to a higher degree of confidence than is now possible given limited scientific understanding. Currently, there is intense international debate among individuals, corporations, government officials and nations as to what if anything the world should do about this issue, with particular attention focused on the creation of a framework convention to limit emissions of greenhouse gases. Specific provisions for an international treaty should be the big agenda item at the World Conference on Environment Development in Brazil in 1992. It is virtually certain that acrimony over the potential seriousness of and responses to global warming will dominate the environmental agenda at least until that conference is concluded.

Arguments for dramatic cuts in fossil fuel consumption in developed countries, forsaking a fossil fuel basis for development in developing countries and the need for dramatic slashing of population growth rates and deforestation in developing countries have been typically suggested to halt the rate of injection of greenhouse gases that are expected to create unprecedented global warming into the next century. However, critics, particularly those from affected industries or with ideological views against national or international regulations or taxes on entreprerieurial activity, have strenuously opposed such activities as threatening to world economic development and a disincentive to individual

enterprise, national self-sufficiency or efficient government. Environmental critics counter that without such measures the earth is already committed to a degree or two of warming regardless of what we do and only a cut of about 50% or more in carbon dioxide, methane and CFC emissions over the next 50 years has any hope of stabilizing the climate at only a few degrees warming, arid not committing us to well beyond the unprecedented levels of two or more °c by the end of the next century.

The global warming environment/development debate has led to charges and countercharges about people whose proposed actions or inactions will condemn millions to poverty on the one hand or a planet to catastrophe on the other.

GLOBAL WARMING: THE POLICY DEBATE

It is my personal view that it will take a decade or two before research will begin to be able to narrow the wide range of uncertainties surrounding the possible climatic future to which natural and human systems will have to adapt in the decades ahead. It is possible, with luck, that we may experience only a degree or so warming over the next century, an amount which would largely be adaptable for most species, including humans. On the other hand, uncertainties are just as likely to make present estimates (which project a few degrees warming by the middle of the next century) to be underestimates as much as overestimates, in which case we could be unlucky and be committed to catastrophic magnitudes of change well before the end of the next century. Since some developing countries are counting on the use of cheap fossil fuels to power their industrial phase, just as developed countries did in the Victorian era, and since developed countries have anywhere from 3 to 20 times the per capita consumption levels of energy and materials that poor developing countries now suffer from, international negotiations for a framework convention to limit emissions will be very difficult.

It is my belief, however, that solutions can be found which do not require major unacceptable concessions from either side, at least for a period of a decade or so. Fortunately, in the past 5 years, engineering/economic analyses have conclusively demonstrated previous assertions that cost-effective investments in efficient lighting, housing, machinery, transportation, farming, and other activities cannot only cut developed countries' emissions by some 20% before the end of this century, but that this can be done at 0 to negative costs! In other words, our current energy, housing, transportation, agricultural and industrial practices are well behind the "best" practices available with state-of-the art technology. Although that technology sometimes involves substantial initial capital investment, that investment will pay back over the next 10 years enough dividends to make the return on investment better than average for investments made by individuals, corporations, or governments (for example, better than 7% per year return). In that sense, these investments are negative costs. Moreover, energy efficiency will not only reduce the magnitude of gaseous emissions that can affect global warming, but also will reduce acid rain, health-damaging air pollutants, dependence on unreliable foreign supplies of energy, balance of payments deficits for energy-importing countries and so forth. These multiple benefits—what has been referred to as "a tie-in strategy"— (see the discussion in Schneider, 1989) —are essentially "free" additional benefits that accrue to us for investing in greenhouse gas emissions reductions. Other examples of tie-in strategies are to reduce tropical deforestation rates, thereby reducing the emissions and increasing the absorption of greenhouse gases and at the same time helping to preserve the vast number of wild species being driven to extinction through indiscriminate deforestation. Banning chlorofluorocarbons is another tie-in action, since it eliminates the prime source of stratospheric ozone reduction in addition to reducing global warming potentials. Another is curtailing population growth, reducing the principal cause of pressure on land, settlements, and natural resources to provide the doubling of food and more than doubling of economic standards projected to be needed over the next 40 years to deal with the near- doubling of population expected in that time. Clearly, any of these tie-in actions make sense on their own merits, and the fact that they also reduce the risk of climate warming by reducing the injection of greenhouse gases gives them urgent priority. The tough questions are not whether to carry out such free-standing policy actions but how much they should be extended beyond negative costs and who should pay.

Developing countries argue that they created less than half the problem and do not have the resources to deal with it anyway, and thus developed countries should both transfer modern technology to LDCs and pay the net extra costs associated with state-of-the-art technologies in comparison to inefficient environmentally less benign old technologies. Indeed, 1 understand their views, but it will be politically contentious to get countries faced with high budget deficits and pressures to improve standards of living of their own least advantaged citizens to both cut their wasteful consumption and at the same time transfer significant resources to developing countries. However, it is my belief that increasing population pressure in the developing world and the growing gap in the equitable distribution of resources between developed and developing countries can only exacerbate world tensions in the 21st century, threatening not only the environment, but global security. Therefore, investments in environmentally sustainable development are urgent with or without global warming, and the fact that global warming reduction is a dividend that we get for making such investments puts them up at the top of my environmental priority list for the 1990s and beyond.

The magnitude of the investments needed to achieve environmentally sustainable development that can slow global population growth rates, reduce pressure on forests, stabilize, then curtail

greenhouse gas emissions and so forth will probably take on the order of tens to hundreds of billions invested annually for decades. While this seems like a staggering sum on a global basis, some perspective can be given when we recognize that the world currently spends some trillion dollars annually in armaments, and the kind of investments needed to deal with environmentally sustainable development are on the order of a tenth of that amount. If the world declared war on underdevelopment, overpopulation, overaffluence and environmental damage, it could cut back substantially its investment in armaments and divert perhaps half of those savings to environmentally sustainable development, allowing the rest to remain at home satisfying demands for improved living conditions in all countries. Fundamentally, dealing with global warming is like dealing with many other global issues of environmental development and security. It involves a shift of priorities away from short-term national interests toward long-term global survival.

TRANSPORTATION IMPLICATIONS

Transportation is responsible for about one-third of the U.S. C02 emissions (see Figure 1, 0TA 1991). As the figure shows, automobiles are responsible for approximately 43%, trucks 34% and aircraft 14% of the transportation emissions. Although no individual category of U.S. emissions dominates, buildings, industry and transportation each account for roughly one-third of total C02 emissions. Many careful recent studies suggest that the U.S. can cut back between 10 and 40% of its current C02 emissions at little to no cost by accelerating the rate at which current inefficient economic practices are replaced by modern best engineering practice. Table 2 from the semi-final draft of the Synthesis Report (NAS 1991a) suggests that a substantial fraction of the approximately 9 billion tons of C02 the U.S. emits annually can be reduced at less than or equal to zero cost. The largest category of negative cost savings is in building energy efficiency (on the order of 10% of total U.S. emissions) with vehicle efficiency also listed in the "net benefit" category, suggesting that a 3% reduction in current C02 emissions could be obtained at less than zero cost simply by accelerating the rate at which already existing vehicle efficiency technological measures are implemented (see Chapter S, NAS 1991b).

Recently the Office of Technology Assessment has come up with even more optimistic cuts projections (see Figure 2) suggesting that more than 10% reductions could be wrung from the transportation sector, but such levels of savings would require substantial shift in fleet average efficiencies beyond that obtainable simply by upgrading technologies. The OTA "tough scenario" assumes 39 mpg by 2000 and 55 mpg by 2010.

In summary, some mix of engineering efficiency and tightened fleet fuel efficiency regulations would appear needed if the transportation sector is to join building and manufacturing sectors in helping the U.S. to reduce its overall CO2 emissions by some 20% at zero or to low cost over the next 25 years.

TABLE 2 Comparison of Selected Mitigation Options in the United States

40-858

Mitigation Option	Other Benefits, Costs, or Implementation Barriers	Net Implementation Cost[a]	Potential Emissions[b] Reduction (Gt CO_2/yr)
Building energy efficiency		Net benefit	0.9[c]
Vehicle efficiency (no fleet change)		Net benefit	0.3
Industrial energy management		Net benefit to low cost	0.5
Transportation system management	Yes	Net benefit to low cost	0.05
Power plant heat rate improvements		Net benefit to low cost	0.05
Landfill gas collection		Low cost	0.2
Halocarbons-CFC usage reduction	Yes	Low cost	1.4
Agriculture	Yes	Low Cost	0.2
Reforestation	Yes	Low to moderate cost[d]	0.2
Electricity supply	Yes	Low to moderate cost[d]	1.0

[a] Net benefit = cost less than or equal to zero.
Low cost = cost between $1 and $9 per ton of CO_2 equivalent.
Moderate cost = cost between $10 and $99 per ton of CO_2 equivalent.
High cost = cost $100 or more per ton of CO_2 equivalent.

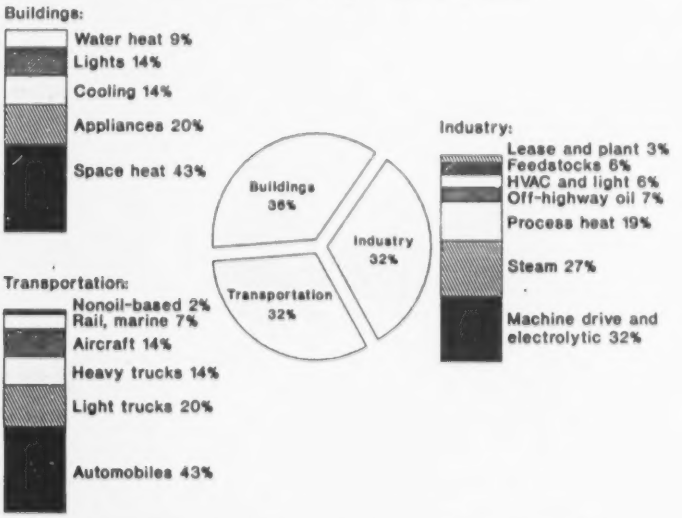
[b] This "maximum feasible" includes reductions in emissions assuming 100 percent implementation of each option in reasonable applications and is an optimistic "upper bound" on emissions reductions.

[c] This depends on the actual implementation rate and is controversial. This represents a middle value of possible rates.

[d] Some portion may fall in low cost, but it is not possible to determine the amount of reductions obtainabl at that cost.

SOURCE: Chapter 11 of the Mitigation Panel report.

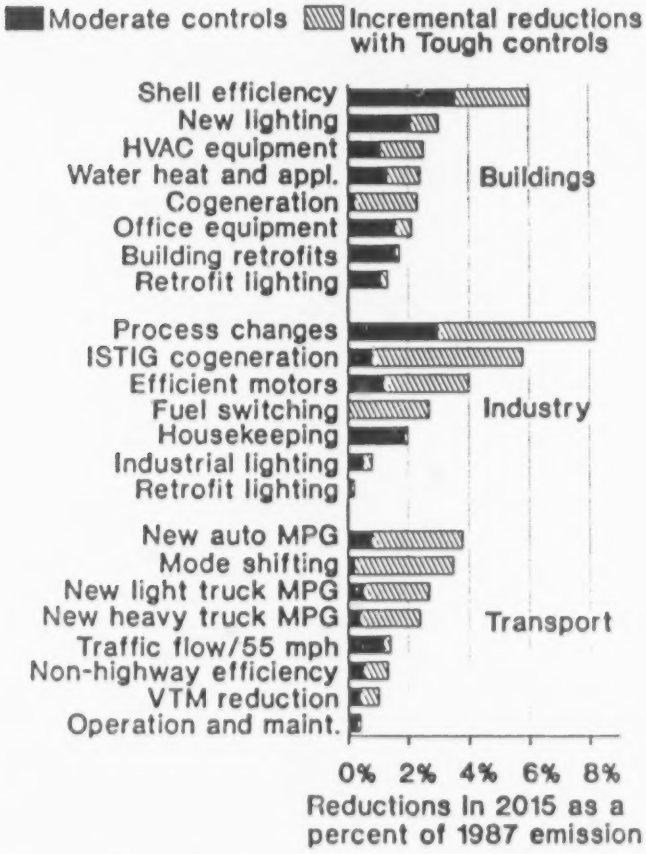
Figure 1 —1987 U.S. CO_2 Emissions by Sector



NOTE: Total carbon emissions from all three sectors equaled about 1.3 billion metric tons in 1987. Emissions have continued to increase since then.

SOURCE: Office of Technology Assessment, 1991

Figure 2—Demand-Side Measures



NOTE: Reductions presented as a percentage of total U.S. carbon emissions in 1987.

SOURCE: Office of Technology Assessment, 1991.

Senator BRYAN. Thank you very much, Dr. Schneider.

Mr. Eizenstat, it is nice to have you with us this morning.

STATEMENT OF STUART EIZENSTAT

Mr. EIZENSTAT. Thank you, Mr. Chairman.

I am appearing today not on behalf of any private interest or organization but as former Chief Domestic Policy Adviser to President Carter.

The Carter Administration oversaw the first implementation of the CAFE requirements which took effect beginning in model year 1978. My assessment of CAFE standards is the same now as it was then, when I was in the White House, and that is that mandated improvements in auto fuel economy, such as those embodied in S. 279, are wise public policy and are a necessary complement to any sound energy and environmental policy.

I would say in response to Senator Ford's statement, as one who helped design the Synthetic Fuels Program, that I am a strong believer in alternative energy sources. But this is a complement to such an energy policy and should not be seen as a substitute for it.

I deeply regret the absence from the administration's energy package of CAFE standards.

The case for these standards has gotten stronger since the years that I served in the White House. They serve two important public policy goals.

One is reducing our dependence on imported oil and, therefore, enhancing our energy security and our national security; second is protecting the environment.

After a dip in the mid-1980's, daily oil imports increased to about 8 million barrels a day in 1989, nearly matching the record level of U.S. imports set in 1978. Imports account for 42 percent of our total oil consumption. The figures indicate that will rise to 55 percent in the year 2000.

Oil imports, as has been indicated by Senator Kerry and Senator Gorton and you, Mr. Chairman, now account for almost half the total trade imbalance the U.S. has. Oil imports from particularly volatile regions of the world are increasing at an ever faster rate, and the vulnerability of the U.S. economy to imported oil supply disruptions has been twice dramatically demonstrated in the 1970's.

Indeed, I lived through the second of those and saw the economic consequences and the body blow that the economy had, both to growth and to inflation.

The OPEC oil embargo, for instance, in 1973-74, is estimated to have caused the loss of 500,000 jobs and $35 billion to $45 billion in GNP.

Of course, in the past 6 months, we have witnessed yet again the impact of a third oil shock. The gasoline market, in particular, remains very sensitive to even minor supply disruptions, as we have seen.

There are also important environmental benefits to be gained from holding down gasoline consumption. First, increased fuel efficiency will reduce air pollution. Second, the saving in oil consumption produced by increasing new car fuel economy to 40 miles per gallon would dwarf the potential oil production from the Arctic National Wildlife Reserve.

CAFE standards are the most effective available policy for slowing the growth of oil consumption and oil imports. The transportation sector is the largest consumer of oil, accounting for 63 percent of all of our oil consumption. Almost 40 percent of consumption is attributable to automobiles, vans, and light cars alone.

We have clear evidence that CAFE standards work. As a result of the standards under the 1975 law, which increased from 18 to 27.5 miles per gallon from 1978 to 1985, the average fuel efficiency of new cars increased from 14 miles per gallon in 1975 to about 27 miles per gallon in 198S.

In contrast, the Reagan Administration authorized reductions in CAFE standards to 26 miles per gallon in 1986 through 1988, and 26.5 miles per gallon in 1989.

For model year 1990, those standards returned only to the 1985 level of 27.5 miles per gallon.

Without escalating CAFE standards, actual fuel economy has declined since model year 1986. After years of steady improvement, domestic fleet performance flattened out at about 27 miles per gallon, and the mileage of imports declined from 31.5 to under 30 miles per gallon.

Market forces alone would not have produced a doubling of new car fuel efficiency standards between 1975 and 198S. For example, in countries like Great Britain, Germany and Japan, with a price of gasoline that is 2 or 3 times higher than in our country, the average fuel economy is only 3 or 4 miles per gallon higher, at slightly over 30 miles per gallon.

This suggests that, while gasoline taxes are a useful complement—and indeed, I support them strongly as a way of saving energy—they are not an effective substitute for CAFE standards.

As evidenced by the struggle over the 5 cent increase in the Federal gasoline tax in last year's budget package and our efforts in the early to late 1970's to increase gasoline prices in our 1977 Energy Plan, it is extraordinarily difficult politically to enact any significant gasoline taxes in this country in any event.

The principal argument against CAFE standards is that market forces should be permitted to determine how much consumers want to invest in fuel efficiency. However, this market, Mr. Chairman and Members of this Subcommittee, is imperfect. It is imperfect because there are externalities involved in the use of inefficient vehicles.

The price of gasoline does not adequately account for the associated national security and environmental costs. The uncontestable public benefits that have accrued to the Nation from the existing CAFE standards demonstrate why CAFE standards are a sensible supplement to market forces.

Automobile manufacturers continue to argue, as they argued when I was in the White House, the complying with increasingly strict CAFE standards is technologically infeasible.

I remember meeting in the Cabinet Room in 1977 with auto executives who explained that the proposed increases in fuel efficiency simply were impossible to achieve technologically.

Despite these predictions, the U.S. auto industry has complied with these standards and, indeed, even benefitted by them. Increasing the fuel economy of domestically manufactured cars permitted the U.S. auto industry to more effectively compete with fuel efficient imports.

The auto industry also argued that improved fuel efficiencies could not be achieved without considerable downsizing of the fleet, to the detriment of consumer choice.

Your proposed legislation, Mr. Chairman, would not, however, limit the types of cars available to consumers. At most, it would cause manufacturers to adjust the prices for their various models so as to marginally increase the incentives for consumers to purchase relatively fuel efficient models.

Let me close with several observations on the basic design of the Bryan-Gorton bill.

Unlike the original law, S. 279 requires each manufacturer to achieve a percentage increase in fuel efficiency relative to the baseline average fuel efficiency for model year 1988. This is very sound public policy because it eliminates any competitive disadvantage suffered by domestic manufacturers at the hands of Japanese or other foreign competitors.

It will also arrest the disturbing trend of decreasing fuel efficiency for imported vehicles.

Some opponents have raised concerns about the effect of higher standards on vehicle safety. But I believe that improved fuel efficiency can be achieved, as you suggested in your opening statements, without detrimental effects on vehicle safety, by using airbags and other available safety technologies.

I would suggest that the Subcommittee consider CAFE based incentives for the installation of driver and passenger side airbags, such as those included in last year's bill but not in this year's.

In 1988, the CAFE law was amended to provide preferential treatment to alternative fuel vehicles in calculating fuel economy. Appropriate preferences for alternative fuel vehicles should continue to be included.

In conclusion, Mr. Chairman and Members of the Subcommittee, CAFE standards should not be unnecessarily inflexible.

For example, the current law establishes credits in excess of that required by law, but permits these credits to be carried forward only for three years. One

means of encouraging rapid improvements before the new, higher CAFE standards become effective would be to make these credits bankable without any time restrictions, so that manufacturers can make early improvements and receive a compensating benefit later.

I support the Bryan-Gorton bill, the legislatively mandated improvements, such as those contained in your legislation, for the energy security, national security, and environmental reasons that I have discussed.

Thank you.

[The statement follows:]

STATEMENT OF STUART E. EIZENSTAT

Good morning. I want to thank Chairman Bryan and the Subcommittee for inviting me to offer my views about automobile fuel efficiency standards and on S. 279. Although I am presently a partner with the law firm of Powell, Goldstein, Frazer & Murphy, I appear before you today as the former Chief of Domestic Policy Advisor to President Jimmy Carter, not on behalf of any organization or private interest. The Carter Administration oversaw implementation of the first corporate average fuel efficiency ("CAFE") requirements, which took effect beginning in model year 1978, and established the CAFE standards for model years 1981- 1984. Between 1978 and 1985, the CAFE standards under the 1975 Motor Vehicle Information and Cost Savings Act rose incrementally from 18 to 27.5 miles per gallon ("mpg"), and as a result the average new car fuel efficiency improved from 14 mpg in 1975 to 27 mpg in 198S. In contrast, no progress in automobile fuel economy has been made in the past five years. My assessment of CAFE standards is the same now as it was when I was in the White House — mandated improvements in automobile fuel economy such as those embodied in S. 279 are wise public policy and are a necessary part of any sound energy and environmental policy.

The case for CAFE standards has gotten stronger over the years since I served in the Carter White House. CAFE standards serve two important public policy goals: (1) reducing dependence on imported oil and thus enhancing the Nation's energy security; (2) protecting the environment.

The U.S. is no less reliant on imported oil now than it was in the 1970s, so the Nation's national security and balance of trade will both be enhanced by improving fuel efficiency. After a dip in the mid-1980s, daily oil imports increased to about 8 million barrels per day in 1989! nearly matching the record level of U.S. imports set in 1978. Oil imports account for 42 percent of total U.S. oil consumption. The Energy Information Administration projects that imports will rise to 55 percent of consumption in 2000. Oil imports accounted for $49 billion on the 1989 trade deficit, or almost half of the total trade U.S. imbalance.

Oil imports from particularly volatile regions of the world are increasing at an even faster rate. Imports from the Persian Gulf states have risen from about 700,000 barrels per day in 1982 and only about 300,000 barrels per day in 1985 to almost 1.9 million barrels per day in 1989. In 1989, Persian Gulf imports accounted for 26 percent of all U.S. oil imports and 11 percent of all U.S. oil consumption. The great majority of the world's proven oil reserves are located in the Middle East — 63 percent of the world's oil reserves are located in the Persian Gulf states, in contrast to just three percent in the United States — indicating that the trend toward increasing reliance on imports from unstable regions will continue.

The vulnerability of the U.S. economy to imported oil supply disruptions was dramatically demonstrated twice in the 1970s. Oil price increases caused first by the 1973-74 OPEC oil embargo and again by the fall of the Shah and reduced Iranian oil production in the late 1970s wreaked havoc on our economy — I lived through the economic consequences of the second oil crisis at the White House. These oil crises imposed enormous costs on the U.S. economy. The OPEC oil embargo, for instance, is estimated to have caused the loss of 500,000 jobs and $35 to $45 billion in gross national product.

In the past six months, we have witnessed the impact on our economy of yet a third oil shock. Oil price increases caused by the hostilities in the Persian Gulf are exacerbating the current recession. The future course of the recession will depend heavily on the direction taken by oil prices.

The gasoline market remains very sensitive to even minor supply disruptions. Following the Exxon Valdez oil spill, the retail price of gasoline jumped by 10 cents per gallon in just three weeks. Similarly, we are all familiar with the dramatic price increases that followed the Iraqi invasion of Kuwait.

In addition to increasing the vulnerability of the U.S. economy to oil price increases and supply limitations, growing oil imports implicate national security interests in the most direct way. Although it is far too simple to characterize the conflict with Iraq as a war about oil, the presence of strategically important oil reserves in the Gulf region was one important factor leading the U.S. Government to commit military forces, with all of the attendant risks and costs, to promote stability in that explosive region. Given the adverse geopolitical, economic, and trade consequences of growing oil imports, it is in the Nation's best interests to take sensible steps to control reliance on imported oil.

There are also important environmental benefits to be gained from holding down gasoline consumption. First, increased fuel efficiency will reduce air pollution. In addition to emission reduction benefits in cities suffering from smog problems, more fuel-efficient vehicles emit less carbon dioxide, one of the so called "greenhouse gases." Although the effect of improving fuel economy on total carbon dioxide emissions would be small, it could be an important symbol to the world community of the U.S. commitment to addressing the global warming problem. Second, improving fuel efficiency will reduce the pressure to permit oil exploration and production in environmentally sensitive regions. For example, the savings in oil consumption produced by increasing new car fuel economy to 40 mpg dwarf the potential oil production from the Arctic National Wildlife Reserve.

CAFE standards are the most effective available policy for slowing the growth of oil consumption and oil imports. The transportation sector is the largest consumer of oil, accounting for 63 percent of oil consumption. Almost 40 percent of consumption is attributable to automobiles, vans and light trucks alone. Moreover, we have clear evidence that CAFE standards work. As a result of the standards under the 1975 law, which increased from 18 mpg in 1978 to 27.5 mpg in 1985, the average fuel efficiency of new cars has increased from about 14 mpg in 1975 to about 27 mpg in 198S.

In contrast, the Reagan Administration authorized reductions in the CAFE standards to 26 mpg for 1986 through 1988 and 26.5 mpg in 1989. For model year 1990, the CAFE standard returned to the 1985 level of 27.5 mpg. Without escalating CAFE standards, actual fuel economy has declined since model year 1986. After years of steady improvement, domestic fleet performance flattened off at about 27 mpg, and the mileage of imports declined from 31.6 to 29.9 mpg. Likewise, the fuel economy for light trucks has also been stagnate, increasing only slightly from 20.5 mpg in 1982 to 20.9 mpg in 1990. The Department of Transportation has set the light truck standard at only 20.2 mpg for 1991 and 1992.

EPA predicts that the number of vehicle miles traveled will increase by a total of 36% between now and 2001. Consequently, substantial improvements in fuel economy will be needed simply to keep gasoline consumption from growing.

Market forces alone would not have produced a doubling of new car fuel efficiency between 1975 and 198S. In countries like Great Britain, Germany, and Japan, where the price of gasoline is two or three times higher than gasoline prices in the U.S., the average fuel economy is only three or four miles per gallon higher at slightly over 30 mpg. This pattern also suggests that gasoline taxes are not an effective substitute for CAFE standards. These countries have much higher gasoline taxes (on the order of $1.40 to $1.70 per gallon, as opposed to 30 to 40 cents per gallon in the United States), yet fuel economy is not substantially higher. Moreover, as evidenced by the struggle over the five cent increase in the federal gasoline tax in last year's budget package, it is very difficult politically to enact significant gasoline taxes in this country even for deficit reduction purposes.

The principle argument against CAFE standards is that market forces should be permitted to determine how much consumers want to invest in fuel efficiency. However, this market is imperfect because of the "externalities" involved in the use of inefficient vehicles. The price of gasoline does not adequately account for the associated national security and environmental costs. The uncontestable public benefits that have accrued to the nation from the existing CAFE standards — reduced oil consumption of 2.5 million gallons per day relative to pre-1975 levels, with consumer savings of at least $40 billion — demonstrate why CAFE standards are a sensible supplement to market forces.

Automobile manufacturers continue to argue, as they argued when I was in the White House, that complying with increasingly strict CAFE standards is technologically unfeasible. I remember meeting in the Cabinet Room in 1977 with auto executives who explained that the proposed increases in fuel efficiency would be impossible to achieve technologically, and would lead to the ruin of the U.S. auto industry. Despite those predictions, the U.S. auto industry has complied with CAFE standards and even benefitted from them. In some recent years, U.S. manufacturers have achieved average fuel economy in excess of the standards, earning credits that can be applied in prior or future years. Moreover, increasing the fuel economy of domestically manufactured cars has permitted the U.S. auto industry to more effectively compete with fuel efficient imports..

At hearings last year, the Office of Technology Assessment, the Environmental Protection Agency, and the Department of Energy all indicated that average fuel efficiency could be substantially improved. The primary disagreement is over how much and how fast fuel economy can be improved. In fine tuning the requirements of S. 279, the Subcommittee should consider any valid technical and practical limitations on achieving further improvements in fuel economy.

The automobile industry also has argued that improved fuel efficiencies cannot be achieved without considerable "downsizing" of the fleet, to the detriment of consumer choice. The proposed legislation would not, however, limit the types of cars available to consumers. At most, it will cause manufacturers to adjust the prices for their various models so as to marginally increase the incentives for consumers to purchase relatively fuel efficient models. As a result, consumers could face slightly higher prices for low mileage vehicles and slightly lower prices for high mileage vehicles, but there would be no regulatory limitations on the range of products available.

You will hear from other experts on what fuel economy standards and compliance schedules are achievable, so I will not comment on the specifics of S. 279's requirements. However, I offer several observations on the basic design of proposed CAFE standards.

Unlike the original law, S. 279 requires each manufacturer to achieve a percentage increase in fuel efficiency relative to the baseline average fuel efficiency for model year 1988. As a result, both domestic and foreign auto manufacturers would be required to make improvements in fuel economy. This sound public policy eliminates any competitive disadvantage suffered by domestic manufacturers at the hands of Japanese and other foreign competitors because their sales include more large cars, and creates a more level playing field for domestic and foreign manufacturers. It also will arrest the disturbing trend of decreasing fuel efficiency for imported vehicles. I note that there may be alternative regulatory designs which can also accomplish these important policy objectives.

Some opponents have raised concerns about the effect of higher CAFE standards on vehicle safety. No one wants to sacrifice vehicle safety for the sake of marginal increases in fuel efficiency. However, I believe that improved fuel efficiency can be achieved without detrimental effects on vehicle safety by using air bags and other available safety technologies, and by reversing the trend toward larger engines capable of higher speeds. The Subcommittee should consider whether CAFE based incentives for the installation of driver- and passenger-side air bags, such as those included in last year's CAFE bill (S. 1224), are appropriate.

In 1988, the CAFE law was amended to provide preferential treatment to alternative fuel vehicles in calculating fuel economy. By the end of this decade, the number of clean fuel vehicles will explode as a result of last year's Clean Air Act Amendments. Beginning in 1998, a share of all vehicles purchased by fleet owners in the 22 smoggiest cities must be clean-fuel (e.g., methanol, ethanol, natural gas, electricity) vehicles. In addition, the Clean Air Act Amendments require the sale of 150,000 clean-fuel vehicles per year in California beginning in model year 1996, and 300,000 per year in 1999 and thereafter. Appropriate Preferences for alternative fuel vehicles should continue to be included in the CAFE policy because use of alternative fuels poses fewer energy security and environmental concerns than gasoline consumption.

The CAFE standards should aggressively promote improvements in fuel economy, but should not be unnecessarily inflexible. For instance, the current law establishes "credits" for achieving a fleet average fuel economy in excess of that required by law, but permits these credits to be carried forward only for three years. One means of encouraging rapid improvements before the new higher CAFE standards become effective is to make these credits "bankable" without a time restriction, so manufacturers that make early improvements will receive a compensating benefit later.

I encourage this Subcommittee to take action on CAFE standards. After each of the oil shocks in the 1970s, there was a temporary public clamor for action. However, the public attentions quickly faded, the political will to develop a coherent energy policy soon followed. The danger in the current situation is that our focus on the importance of a "National energy strategy" will dissipate once the Gulf war is ended and world oil prices again fall toward the pre-war level.

I support legislatively mandated improvements in fuel economy such as those contained in S. 279 for the important energy security and environmental reasons I have discussed. In reviewing the specific CAFE mandates and compliance schedules in S. 279, the Subcommittee should carefully consider the technical and practical constraints on improving fuel economy to ensure that the final legislative requirements are achievable.

Senator BRYAN. Thank you very much, Mr. Eizenstat.

Dr. Breglio, we frequently hear public opinion of what the public will and will not buy into. We are very delighted to have an expert on public opinion, such as you, here to join us this morning. We will hear from you now.

STATEMENT OF DR. VINCENT BREGLIO, PRESIDENT, RESEARCH/STRATEGY/MANAGEMENT, INC., LANHAM, MD

Dr. BREGLIO. Thank you, Mr. Chairman.

I am pleased to be here and to share with you this study of 1,200 eligible voters from a national sample of public opinion.

This study focused on energy policy issues and, in that sense, it was unique. You seldom find people sitting around the dining room table, saying gee, how about those CAFE standards.

So energy policy, in and of itself, is not a salient topic of discussion. If you are going to get people to respond to it, you must raise the issue with them, as we did in approximately 30 minutes of questioning.

This is the third such survey over a 3 year period, and, as the third in line, it confirms much of what has been gathered in previous studies.

Also, over 30 minutes, we collected a tremendous amount of information, only a portion of which is relevant to the CAFE 40 issue under discussion in this

hearing. I will try to limit my remarks to that. But I do want to touch on a couple of things—for example, global warming—that we went into in some detail in this study.

This was a bipartisan effort. That is, we included a Democratic firm as our counterpart, my firm representing the Republican side and the firm of Greenberg, Lake representing the Democratic side, so that we touched all bases. As it turns out, it wasn't necessary. It does not seem to matter greatly whether you are a Republican or a Democrat when it comes to assessing various positions on energy options. There is very little difference.

The differences that do emerge are more easily explained by ideology, rather than partisanship. Conservatives do differ somewhat from liberals. But it does not matter much whether you are a conservative Democrat or a conservative Republican. You tend to be very much the same if you are conservative, regardless of your partisan orientation.

We thought that was interesting. But, still, we were a bipartisan group as we approached these data because we wanted to make sure we could interpret the results cleanly.

Let me share with you the results.

As I read the headlines dealing with energy policy over the last few days, it strikes me that the discussion of options to increase production through exploration and development or reduce consumption through efficiency and conservation are precisely the options we presented to the 1,200 respondents in this study back in the first week of December, when we interviewed them.

What we found when we presented these options is that three out of four persons preferred the option of reducing consumption through increased efficiency over increasing production through exploration and development.

This was an enormous response in terms of public opinion, and it did not matter whether you were a liberal Democrat or a conservative Republican. Three percentage points separated those widely disparate groups on the continuum in terms of their opinion on this particular issue. They both, felt that conservation or efficiency was the way to go in terms of taking care of the country's energy needs.

Does that mean that all of a sudden we have become disaffected with——

Senator GORTON. Excuse me, Vince. Did you ask that as an either/or question, or could they say both?

Dr. BREGLIO. No. We gave them the alternative: which of these two options would you prefer to take care of our energy needs in the future, and they chose one of the two options. But they could say both. We did not prohibit them from saying both. We just asked them which they preferred. And they preferred energy efficiency over increased development and exploration.

Senator GORTON. Thank you.

Dr. BREGLIO. We asked other questions as well.

Let me turn now to the automobile and to those issues which are more pertinent to the subject under discussion.

We might wonder if we have lost some of the love affair we have had with our automobile, and I am here to report that it certainly has not ended. But we have changed the nature of the relationship.

I suppose that fits with the times.

We seem to be looking for some alternatives to the status quo. For example, as we tested various options that might be considered, we asked for support or opposition to the development of alternative fuels from grains. There was overwhelming support for this particular energy policy alternative. Nine out of 10 persons said they would like to see it happen.

Regarding CAFE 40, which we have been talking about this morning, 8 out of 10 persons support it. Seven out of 10 would support CAFE 40 even if it cost them $500 more to purchase a new automobile.

We thought that was significant.

Tax rebates on gas "sippers," that is, cars that get higher gas mileage than the current Federal standards were supported by 8 out of 10 persons.

Now, on the issue of taxes, Mr. Eizenstat said that taxes are difficult to accept. Clearly, the people we asked are reticent to accept taxes as an energy policy alternative. For example, a 50 cent per gallon tax on gasoline, is rejected by 60 percent of those we talked to. Even when the tax was earmarked for the Environmental Trust Fund and phased in over a three year period, it was rejected. A tax on crude oil imported to the U.S. is split right down the middle, half support and half oppose. A 10 cent per gallon tax earmarked for the Environmental Trust Fund also splits support right down the middle.

We found a strong relationship between a person's ideology and the size of automobile they drove. If you drive a compact or subcompact car, you are much more likely to be a moderate or a liberal; if you drive a full sized car, you are much more likely to be a conservative.

I will leave you to figure out what that means.

I will conclude by saying that a National Energy Policy, as the public might define it, would emphasize reducing demand for fossil fuels, thus minimizing a lot of the tough environmental decisions that are associated with increasing our oil supply. The public wants more stress placed on renewable energy sources and efficiency. It favors actions that save oil and makes cars and homes more efficient.

Now, I have been a Republican pollster for a long time, and I recognize that public opinions are basically reactions to abstractions. When faced with real economic tradeoffs, spotted owls and "Big Green" initiatives lose. Still, these data tell me that people do have some sense of what they would like the future to be, and these data argue for a very balanced approach to crafting a real National Energy Policy, a balance that emphasizes renewables, and greater efficiency together with the more traditional energy sources.

Thank you very much.

Senator BRYAN. Thank you very much, Dr. Breglio.

Dr. Schneider, as I understood the thrust of your testimony this morning and your statement, you're indicating that there are certainly a number of uncertainties and variables that go into any projection, and, essentially, it is in that area that you get the difference of opinion.

From a layman's perspective, is it fair to say that there is a consensus that the continuing emission of substantial volumes of carbon dioxide in the atmosphere is harmful? Is there a consensus on that, would you say?

Dr. SCHNEIDER. I think there is a consensus that it is potentially harmful, but then you get into the debate of who wins and who loses.

Even if you have a large change, change per se is not bad. If you know it's going to happen and you can forecast it, then you can respond. If you know it is going to get drier, you can tell farmers to plant different things; you can adjust irrigation strategies.

But if we are going to get very rapid change, then it is going to be more difficult to adapt for humans, very difficult for nature to adapt, and—and these go together—very difficult for my profession to forecast the details. This is because the more rapidly these gases build up in the atmosphere, the more rapidly they force the systems of the climate—the atmosphere, the oceans, the ice and so forth—to go out of balance with each other.

When they go out of balance, what we call a transient, it is very difficult to forecast that with any credibility.

So, what you end up having is the need to adapt to rapid change that is less forecastable. In that situation, while you cannot assert 100 percent that it is going to be disastrous, in my opinion, the probability of being hurt by rapid, fast change is much, much higher than the probability of being hurt by slower and forecastable change.

Therefore, I always personally advocate that we try to slow that down, to buy ourselves time, not only to adapt, but to improve our capacity to forecast.

Senator BRYAN. Stated another way, is there a substantial body of scientific opinion, responsible opinion, that indicates we ought not to be concerned about the greenhouse gases at all?

Dr. SCHNEIDER. There are always individuals that will take that position——

Senator BRYAN. I understand that.

Dr. SCHNEIDER.——and they do show up quite frequently in op-ed pages and recently in letters to "The New York Times." But I keep telling people that you can't listen to a debate among two scientists or three scientists. It is easy to get confused.

There are assessment bodies, like the National Academy of Sciences, the International Council of Scientific Unions, and, recently, a U.N. sponsored group called the Inter-Governmental Panel on Climate Change. These bring together critics, supporters, and a whole spectrum of people.

There have been more than a dozen studies in the past dozen years, and they all come out with the same conclusion, which is that the magnitude and rates of our change, that we are putting into the planet now, are potentially unprecedented. The more rapidly these changes evolve, the more likely it is that there will be difficulties in adaptation, especially for natural systems, and that it is a good idea to slow it down.

Consensus does not mean that everyone agrees. But, by and large, in my opinion, there is a clear, strong, majority of the scientific community that would argue that these are reasonable probabilities.

Senator BRYAN. Thank you.

Mr. Eizenstat, critics of the auto industry have made the point that, had the industry had a more diversified product line in terms of fuel efficiency during the period of the initial OPEC oil embargo in 1973 and the time that immediately followed that, the American, that is, the domestic, auto industry would have been far better able to prevent the incursion of great numbers of imported automobiles, a legacy which continues today.

From your perspective of serving in the White House in those years, do you have any comment in terms of your own assessment of the situation in the mid-1970's?

Mr. EIZENSTAT. Yes. I agree.

I think there were two issues. One was the perceived difference in quality. But I think that fuel efficiency was definitely a factor.

The U.S. auto industry was way behind in terms of fuel efficiency during that period of time. And, as I indicated, Mr. Chairman, in my testimony, I really believe that the mandates in the 1975 law, which we implemented, were an action forcing device to help the industry produce a wider variety of more fuel efficient vehicles, which, in turn, improved their competitiveness. Had they had those on line to begin with, we might not have seen that initial penetration in the market.

One of the problems is that once foreign imports do penetrate, you buy your first foreign car and the tendency is simply to roll over and buy a second, replacement foreign car. So there is a lot of catch-up to do.

But I absolutely believe that that was a negative factor in increasing the penetration of our market by foreign imports.

Senator BRYAN. So I take it it would be your view that—notwithstanding the protestations that you heard in the White House in 1977 and perhaps at other times—by reason of implementing these CAFE standards, the auto industry really has been strengthened as a consequence, in terms of their competitive ability in the global marketplace?

Mr. EIZENSTAT. Yes. They had indicated that they did not think they could technologically make the changes necessary. Indeed, they made them and in some cases actually have exceeded the mandates, and I think to the benefit of themselves and the consumer.

Senator BRYAN. All of us today are aware that the auto industry, both the domestic and the import, has faced a pretty difficult time. The earnings results in the last quarter are something that caught all of our attention.

The auto industry will undoubtedly argue today that to require an improved CAFE standard will undermine the strength of the auto industry and do irreparable damage.

What is your response to that?

Mr. EIZENSTAT. First, I spent a lot of time over four years dealing with auto issues, from fuel efficiency to tail pipe emission standards, to the Chrysler bailout, to a micro- study that we were starting in 1980 of the auto industry. It is a very troubled industry. There is no question about it.

These will impose additional costs, and there is no question about that. However, it seems to me that the Bryan- Gorton bill permits the kind of phase-in, gives enough time for the industry to adjust. It does not require such rapid increases—20 percent for the next 5 years and then another 20 percent. It seems to me that it gives the industry enough time. Importantly, from a competitiveness standpoint, since it mandates a similar percentage increase for imports, it would require the same types of capital investments for those imports as it would for our domestic industry. Therefore, the competitive disadvantages, which they might argue, do not seem to me to exist.

I think that is one of the important things about the bill that both of you have cosponsored, that is, that percentage increase. So, yes, it will undoubtedly impose a cost burden. But it will be a cost burden that their competitors will also have to share.

Senator BRYAN. Thank you very much, Mr. Eizenstat.

Dr. Breglio, the auto industry frequently says that they build larger and less fuel efficient vehicles because the public demands it. Indeed, the evidence would I think pretty clearly indicate that in the time period 1988 to 1990, both the domestic auto fleet as well as the imported auto fleet became less fuel efficient. During that same period of time, one characteristic which applied to each of those two fleets, generically categorized, is that weight increased, the horsepower race resumed, with the imports at about 22 percent increase and I believe the domestics at about a 10 percent increase. All of this runs contrary to improved fuel efficiency.

From a marketing standpoint, and you are involved in marketing in one sense or another, cannot fuel efficiency and energy independence, are those not themes that can be promoted and advocated by the auto industry to advance the cause of more fuel efficient vehicles, rather than to just surrender to the horsepower race?

Dr. BREGLIO. I believe that yes, they can, and have been in the past very effective. I think the initial penetration of the marketplace by foreign imports was based largely on the economy argument. This got them their initial market share. I think the perception that you are buying a more economical vehicle, whether

measured in terms of miles per gallon or economy in terms of less repair costs, still exists today in the marketplace.

So I think that there is a very definite place for the argument of economy in our auto industry.

Senator BRYAN. Thank you.

Let me yield now to Senator Gorton for questions.

Senator GORTON. Thank you.

Vince, the introduction to your study indicates that the survey was taken between the 7th and 11th of December.

Dr. BREGLIO. Yes.

Senator GORTON. These were dates after the United Nations passed its use of force resolutions, but before the war began.

As a consequence, the attention of the people of the United States may have been somewhat more focused on oil and oil related questions than they were in earlier years, maybe less than they are today.

Was there any significant difference in your December, 1990 findings on these questions than in your two earlier surveys? The second half of my question is would you expect there to be any difference if you took that same survey today?

Dr. BREGLIO. On questions that were exactly comparable, we found readings within statistical limits of sampling accuracy; that is, 2, 3 or 4 point differences, which you would attribute to sampling variation. So, in essence, my answer is no, there were no significant differences between the 2 points measured a year or 2 years apart.

Basically, attitudes toward energy policy have remained remarkably, remarkably stable over the last 3 years.

When you ask people, and you do have to ask them, because, as I said, it's not on the top of their mind, about energy policy, they come back with an attitude that reflects greater emphasis on efficiency and renewables, as I described in my summary statement.

Senator GORTON. Dr. Schneider and Mr. Eizenstat, you have heard the results of this survey. I may editorialize, and I don't think Dr. Breglio will disagree with me, that the 50/50 result on a very large gas tax increase would probably not survive its reality.

My question to each of you, to the extent that you feel capable of answering it is, would even such a drastic increase in a gas tax have a dramatic impact on energy efficiency in and of itself? At least one study we have seen indicates that even in European countries, where gasoline costs upwards of $4 a gallon, the average energy standards are about what they are in the United States.

Do you think, in other words, that a significant gas tax increase, could have the same kind of impact or even a greater impact than this bill?

Mr. EIZENSTAT. Well, if I may, Senator, let me respond from two perspectives. First is just a purely political perspective.

I certainly have the scars to show for trying to get even a modest gas tax done in the 1970's. It is an extremely sensitive issue.

You went through, as you know, in the Senate trying to get a 5 cent increase tied to deficit reduction, and it was like sweating bullets to get that. So, politically, talking about a huge increase is not going to happen.

Second, even if it did, the studies you referred to are the ones I cited in my testimony. That is, if you look at European countries who have gas taxes on the order of $1.40 to $1.70 per gallon, compared to 30 cents to 40 cents per gallon Federal and State in our country, as you correctly point out, the fuel efficiency of their cars is not considerably greater. It is around 30 miles per gallon versus around 27 miles per gallon for ours.

So there obviously would be some positive impact on conservation, and it is to be encouraged to have that type of tax. But it is not a substitute for these types of mandated requirements in your legislation.

Dr. SCHNEIDER. The problem of global warming is global, as the problem of taxes is global and larger than transportation.

As you know, one of the difficulties of our fragmentation to these Committees or in academic departments of biology and so forth is that we tend to miss those interconnections. The problem with the whole range of emissions is, as I'd said earlier, that we have buildings and transportation and industry, all contributing roughly one-third of CO2 emissions. When we take a look across the board at engineering studies—not just in transportation, but in efficient lighting and in electrical machinery and so forth—we find that right now, the current practice in the United States is well behind the best engineering practice, and that you can show that the cost of buying these extra products that are more efficient today will actually be less over a 30 year lifetime, even with discounting, than the cost of continuing business as usual.

The problem is how do you force that to occur faster? I think taxes is one of the ways to do it.

It may be less efficient than, say, CAFE in transportation. But then, there are other components. And if we only focus the tax on gas, then I think we single out one industry and also one area, where I think we need to focus that tax more broadly—for example, at carbon.

If we look at carbon, then we use a market mechanism, because people, in my opinion, who are opposed to taxes, often misperceive the fact that a tax is not necessarily interfering with the market. It can, in fact, be restoring the market.

Right now, there is no charge on the price of any form of energy that produces, say, carbon dioxide, for its potential effects on the climate.

Now, clearly, in response to Senator Bryan I said that we could make a strong case that there were potential damages associated with that. Well, those damages at present have zero cost in our energy pricing. So how can the market work and set up efficient signals to people on what to do if there is not some way to internalize those externalities?

Therefore, I think that ideologically we have to look at taxes, not as an interference in the market but as a way of actually restoring the market to include the full range of costs. Those costs can include security measures and so forth.

So I think some taxing, mixed with some standards, is probably necessary. We need this mix, which I am glad I heard seems to be politically acceptable to a large number of surveyed people. We have to find a way to force current practice, which is well behind the technology curve, closer to best practice. I think that a mixture of incentives and regulations, not just in transportation, but over a variety of sectors, is that whole system's approach that we need.

Mr. EIZENSTAT. Senator, if I might just add to that point, we tend too often in energy policy to say conservation versus production. The fact is that we need both.

The same applies here on this issue. There is no question that a lot of the conservation that has occurred, and it has occurred over the last 15 years, has occurred both because of government regulation and government programs, but also because of the price issue, because the price has simply gone up.

I think that economists underestimated the elasticity of demand to price in the 1970's, and found a much greater sensitivity to price when price went up.

So there should be a combination of taxes and mandates. They ought not to be looked at as opposing policies, but, rather, as complementary policies.

Senator GORTON. One more question.

Dr. Schneider, are the policies which are implicit and explicit in Senator Bryan's and my bill so uncertain in their effect and in their desirability that we should put this on hold until the NAS study and the DOT review arrive on or after June 30?

Dr. SCHNEIDER. Certainly, in my view, we know that we are changing the atmospheric environment in unprecedented rates. We know the more rapidly those gases build up, the higher the probability that they will cause difficult adaptations and disruptions.

Therefore, it seems clear that slowing down those rates is critical.

The debate is how to do it. You will hear people in various industries tell you that on a global basis, if we put restrictions on them, it will only make a 1 percent difference in the world. I have heard that from the coal people, I have heard it from various manufacturing sectors, including transportation.

The problem is if 100 people say they are only 1 percent of the problem, they each demand to be exempt, and then we have 100 percent of the problem.

That is why I said earlier that we need, in order to be fair, to do a little bit in every sector, and I think the sooner we get to doing it, the less the dose of change we'll have to adapt to and the better break we will give nature and ourselves in dealing with that future.

Dr. BREGLIO. Senator, may I just make one very brief comment? It is related to global warming but pertinent to your question.

In 1988, 6 out of 10 people were aware of the problem of global warming. Today, 9 out of 10 are aware of the problem of global warming.

In 1989, 7 out of 10 people felt the United States should be taking a leadership role in fighting the problem. Today a similar number, 7 out of 10, think we should be taking a leadership role.

When asked whether we should act now unilaterally to begin stopping CO2 emissions or whether we should wait for further research, which, as I understand it, is essentially the policy of the administration, 7 out of 10 said we should not wait for further research, but we should take unilateral action to do whatever we had to do to stop carbon dioxide emissions today.

Senator BRYAN. Thank you.

We have been joined by the former chairman of the subcommittee, Senator Gore. I would yield to you.

OPENING STATEMENT BY SENATOR GORE

Senator GORE. Thank you very much, Mr. Chairman, and my respect and congratulations to you and Senator Gorton for your attention to this important issue and your leadership in this field.

I wish to apologize to the witnesses for missing their opening statements and for the fact that I am going to have to leave and then come back.

General Colin Powell and Secretary Cheney are both before the Armed Services Committee this morning. We have a lively discussion of the ground war versus the air war and some matters that are extremely urgent just now for our country. I will necessarily be absent for part of this hearing.

I especially want to return for part of the next panel. Mr. Chairman, I want to take this opportunity to formally welcome Jerry Benefield of Nissan USA who is here. They have the largest automobile manufacturing plant in the world under one roof, or will have when it is completed, in my home State of Tennessee. I commend his testimony to you.

We do not have a representative of Saturn here this morning, but George Eads of General Motors is here, and I want to welcome him, along with the other witnesses.

As for this panel, Steve Schneider is a special, long- time friend, and I know that he felt, just as I did, in listening to Dr. Breglio talk about the slowly rising numbers of awareness of the greenhouse effect, that a lot has gone into that.

Hasn't it, Dr. Schneider?

Dr. SCHNEIDER. Indeed, yes.

Senator GORE. We have worked together a long time.

Stu Eizenstat is a very close personal friend, and I admire your work on public policy as I have for a long time, Stu.

I wanted to say just a few brief words, rather than ask questions now, and then I will come back and pursue these matters later in the hearing.

Yesterday, we got the White House energy policy. Today we have the administration statement on a key part of what should be in the energy policy.

President Bush's approach to energy policy is like somebody addicted to alcohol and drugs confronting the problem, studying it, and then concluding that the problem is they just don't have enough and they have to consume more.

After almost 20 years of debating this problem, we know what WORKS. energy efficiency and energy conservation. We also know that here in the United States, perhaps the single most pressing energy consumption problem is how to improve the efficiency with which our cars and trucks burn gasoline and diesel.

There is strong support for regulatory measures to require higher mileage. There is also compelling logic in support of market remedies of the kind Dr. Schneider was talking about a moment ago.

I have proposed carbon taxes, CO2 taxes, in the context of an Environmental Security Trust Fund, with rebates to subsidize the purchase of more efficient ways to burn energy, more efficient automobiles, for example. I believe that, given the choice between doing nothing on this front and even an imperfect remedy of the kind that has been proposed by this Subcommittee, that we have to do something.

I must say, Mr. Chairman, that a formal requirement that Japanese automobile manufacturers make cars that get 5 to 6 miles per gallon more than American automobile manufacturers get runs the risk of posing them with a challenge that they will meet. And when they do meet it, where then are the American automobile manufacturers?

Let me repeat: given a choice between that proposal and nothing, I will support it.

I believe that we can give some careful attention to how to improve our approach to requiring higher mileage. I also believe that we need to give a lot of attention to this politically untouchable topic of carbon dioxide taxes and carbon taxes. This is because, as Dr. Schneider indicated, our current market mechanism is nuts. We pretend that there are no costs to dumping as much pollution as we want into the atmosphere. We pretend that that is cost free and it is not cost free.

The victory of our capitalist system over communism in the philosophical wars raging on this planet for the last half century give us cause for self congratulation and celebration. But it should also give us an added sense of obligation to correct the deficiencies in the way we account for what are now called externalities in our economic system.

Externalities are defined as everything economists want to forget about. If it is bad and you don't want to think about it, call it an externality, and then you can pretend it does not exist. But that's nuts.

If we are going to have this call for a reliance on the market system, then let's accompany it with some attention to how the market system operates.

I took longer than I thought just for that, Mr. Chairman, but I will come back for the next panel.

Thank you for your courtesy.

Senator BRYAN. Thank you very much, Senator Gore.

Let me just thank the panel once again. I appreciate very much your testimony. I know that some of you have appointments in the very near future, so we will excuse you now.

Our next witness is the Administrator of the National Highway Traffic Safety Administration, Mr. Jerry Curry.

I would publicly, Jerry, like to acknowledge your courtesy in allowing us to rearrange the schedule today to accommodate a couple of members of the previous panel, who had to go to other appointments at or shortly after 10 o'clock. Whenever you are comfortable, you may proceed.

STATEMENT OF HON. JERRY CURRY, ADMINISTRATOR, NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

Mr. CURRY. Mr. Chairman, I am very happy to be here with you again, and with Senator Gorton. It is always a pleasure to come down and to testify, and to be able to exchange views and answer, hopefully answer, some of your questions.

I have a statement for the record that we are submitting. I am going to just give a few summary comments and then be available for whatever questions you may ask.

By and large, the objections that we expressed last year to S. 1224 apply to S. 279, even though we recognize there are some changes and differences between the two bills.

Last year, we stressed that we were concerned about the safety aspects of reducing weight in vehicles. We had done a number of studies, with which I think you are familiar. These studies indicated increases of about 1,300 fatalities and about 6,300 serious injuries annually as the result of downsizing of the passenger car fleet in the 1970's and 1980's, the early 1970's and 1980's.

We were and are concerned about the safety implications of these studies. So, to help provide some essential information for an informed decision on the appropriate fuel economy level, we have expanded our safety study to examine not just single vehicle crashes but multi vehicle crashes, looking at how the weight, size, and crash experiences affect cars and trucks. We expect to complete that report this spring. In fact, it will be finished by the end of April, and we will submit it to your Subcommittee at that time for your examination.

In addition to looking directly at the safety effects of vehicle size and weight, we are separately examining the means available to the manufacturers to increase fuel economy in the next decade. I believe that we are in agreement that that is certainly more than just a worthy goal. It is a necessary one.

Given last year's heated debate on this subject, we believe that it is essential for another fuel economy analysis to be done. We have, therefore, contracted, as you know, for a study by the National Academy of Sciences to ascertain the prospects for improving fuel economy of new vehicles in the next decade.

We expect that study to cover all pertinent information. You have seen the statement of work. It has been forwarded to your Committee. But it will cover all pertinent information that is currently available on the subject, including the results of analysis of small car safety.

The study we have asked to be completed by the end of June. The National Academy has indicated that June 30 for them may be too ambitious a date, but that the report will be expedited for your consideration this year.

A second phase of the study will be completed by March 31, 1992, and that will look at broader measures, alternative measures, to overcome any barriers identified in the first phase and address multiple considerations.

Mr. Chairman, as you know, our first priority in NHTSA is traffic safety, saving lives on our highways, and that is the standpoint from which I am speaking to you this morning. Digressing a little bit from CAFE, I would just mention that, together I think with your help and oversight and encouragement, we have made great progress in safety this year. We have completed rule making on a new side impact standard. That is certain to benefit the passenger car occupants.

Increasing numbers of vehicles, minivans as well as passenger cars, are being equipped with air bags. Shoulder belts are now required in the rear seat of all passenger cars, and we have finally completed work on all rule making actions to extend several passenger car standards to light trucks. These rule makings have worked their way through our agency and been completed. They are presently working their way through the remainder of the process necessary for them to become rules.

But the benefits of these measures to increase the safety of all passenger car occupants and other actions now in progress or in process to improve the safety of other light duty vehicles could be compromised or lost if new legislation should necessitate a significant reduction in the average size and weight of the light duty vehicle fleet.

A smaller occupant compartment means less survival space for occupants in a crash, and the Department is now engaged in litigation on that subject.

The litigation is that perhaps higher CAFE standards have already resulted in lighter weight vehicles and that these vehicles are less safe to their occupants than they would have been at a heavier weight. We are being challenged as to why we allowed this weight to be reduced in vehicles. Although we have successfully defended the current standards, we are somewhat concerned about requirements for future fuel economy improvements which are partially achieved through reducing the occupant size and weight of the vehicle.

In conclusion, I would just stress that we are in favor strongly of reducing dependence on foreign oil. Improving fuel economy is a means to that end. There are other means.

Mr. Chairman, that concludes my remarks. I would be very happy to take your questions.

[The statement follows:]

STATEMENT OF HON. JERRY RALPH CURRY, ADMINISTRATOR, NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

Mr. Chairman and Members of the Subcommittee. I am pleased to appear before you today to discuss the subject of motor vehicle fuel economy and S. 279.

The National Transportation Policy clearly states as one of its six themes the Department's strong support for protecting the environment and the quality of life. But to mandate dramatically increased fuel efficiency at the expense of safety would be a mistake.

The strong objections that we expressed to S. 1224 in the last Congress also apply to S. 279. Al though the new bill softens a few provisions, the essence of the former bill is unchanged. I do not intend to address it in detail. But I do want to mention a NHTSA study of the effects on safety of vehicle downsizing and a study contracted with the National Academy of Sciences of the ability of manufacturers to improve fuel efficiency. I urge you to consider these studies as you debate measures to increase fuel economy.

Last year NHTSA stressed that there was not enough information available concerning the relationship between increased CAFE standards and the safety of the light duty motor vehicle fleet. The studies we had completed at that time — involving only single-vehicle crashes — indicated that occupants of smaller, lighter cars were more likely to suffer serious or fatal injury than 2 occupants of larger, heavier cars. A variety of safety measures in the 1970's and 1980's were successful in reducing highway fatalities. Nevertheless, these studies indicate over 1300 fatalities and 6300 serious injuries occur annually as a result of the downsizing of the passenger car fleet during that period. We were, and are, very concerned about the safety implications of these studies.

To help provide essential information for an informed decision on the appropriate fuel economy level, we have expanded our safety study to examine multi-vehicle crashes, looking at how vehicle weight affects crash experience in car-to-car crashes and in crashes between cars and trucks. We

expect to complete our report on multi-vehicle crashes by April, and will submit it to the Subcommittee at that time.

In addition to looking directly at the safety effects of vehicle size And weight, we are separately examining the means available to the manufacturers to increase fuel economy in the next decade. Given last year' s heated debates on this subject, we believe it is essential for a fuel economy analysis to be done by an organization with an unquestioned reputation for competence, objectivity, and impartiality. Furthermore, the new requirements placed on motor vehicles by the Clean Air Act Amendments cast doubt on all earlier estimates of achievable fuel economy. We have therefore contracted for a study by the National Academy of Sciences to ascertain the prospects for improving the fuel economy of new vehicles in the next decade while still meeting environmental requirements (including the requirements of the 1990 Clean Air Act amendments) and safety standards. This study will also analyze the environmental and safety implications of possible changes in fuel economy standards.

We expect the NAS study to cover all pertinent information currently available on the subject, including the results of our analyses of small car safety. The first phase of the study will examine technologies to improve fuel economy and will identify barriers, such as the economic conditions of the auto industry, that constrain the rate at which such technologies can be introduced. We need to be fully informed about the potential effects of higher fuel economy requirements on the domestic automobile industry, which is currently facing serious economic difficulties, investment requirements, and employment impacts. Safety and environmental requirements will be explicitly included. We have requested that this phase be completed by June 30, so that the Subcommittee will have the opportunity to review it before completing deliberations on S. 279. NAS has indicated that June 30 may be too ambitious a date, but the report will be expedited for your consideration this year. A second phase of the study, to be completed by March 31, 1992, will analyze alternative measures to overcome any barriers identified in the first phase and address other considerations.

Mr. Chairman, motor vehicle safety has always been NHTSA's first priority, and I know it is also yours and the Subcommittee's. I believe that together we are making great progress in safety. We have completed rulemaking on a new side impact standard that is certain to benefit passenger car occupants. Increasing numbers of vehicles — minivans as well as passenger cars — are being equipped with air bags. Shoulder belts are now required in the rear seats of all passenger cars. And we have completed work on all rulemaking actions to extend several passenger car standards to light trucks. These rulemakings are presently working their way through the process.

But the benefits of these measures to increase the safety of all passenger car occupants, and other actions now in process to improve the safety of other light duty vehicles, will be compromised, or lost, if new legislation should necessitate a significant reduction in the average size and weight of the light duty vehicle fleet. During the 1980's, the manufacturers were able to improve fuel economy without significantly reducing the size of the occupant compartment. A smaller occupant compartment means less survival space for occupants in a crash. Furthermore, smaller lighter vehicles have a higher propensity to roll over, increasing the risks of injury or death. Some have alleged, and the Department is now engaged in litigation on the subject, that higher CAFE standards have already resulted in lighter weight vehicles and that these vehicles are less safe to their occupants than they would have been at a heavier weight. Although we have successfully defended the current standards, we are apprehensive about requirements for future fuel economy improvements which are partially achieved through significantly reducing the occupant space and the weight of the vehicle.

In addition to safety considerations, CAFE standards may have other unintentional side effects, such as effects on regulated tailpipe emissions and congestion arising from an increase in vehicle miles travel led due to the lower operating costs of more fuel-efficient vehicles. As a general matter we are concerned with all the potentially significant beneficial and harmful effects associated with CAFE standards.

In concluding my remarks, I want to repeat that we are concerned about the adverse safety effects that may result from reducing the size of the passenger compartment and reducing vehicle weight. We understand that the nation can be subjected to interruptions in supplies of oil from unreliable sources. The Administration's National Energy Strategy is designed to deal with these uncertainties by enhancing the nation's energy security. Several types of measures, such as diversification of oil supply sources, alternative transportation technologies, removal of barriers to the production of conventional and alternative energy from domestic sources, and removal of barriers to investment in cost-effective conservation and efficiency measures should be used in concert in pursuit of our energy supply objectives.

To the extent that fuel economy improvements are considered. I urge the Subcommittee to await the results of NHTSA's studies on the effects of vehicle weight on safety and the forthcoming NAS study on the potential means of achieving fuel economy improvements. The National Energy Strategy recognizes the importance and the sensitivity of the issues being address in the NAS study and notes that after this study is completed, the government will have the information it needs to evaluate fuel economy changes that would affect vehicles produced in the mid-to-late 1990's. I know you agree that, in the search for ways to save energy, we must not overlook the need to save lives and prevent injuries. Mr. Chairman, this concludes my remarks. I would be glad to answer any questions the Subcommittee may have.

Senator BRYAN. Thank you very much, Mr. Curry. We appreciate your testimony.

In your prepared text and indeed in your comment to us, you indicated that the primary mission of NHTSA is auto safety. I guess my question to you, at least for openers, is that in the last session of the Congress, with the leadership of many on this Committee and particularly the long-standing advocacy of the Ranking Member of the full Committee, Senator Danforth, who has just joined us, S. 673, a Comprehensive Auto Safety Bill, was passed out of this Committee. It cleared the floor of the Senate by unanimous consent. Indeed, every auto safety advocate in America that I am aware of supported this measure.

You opposed it.

I guess my question this year is have you had a chance to reconsider your position, because we intend to reintroduce a similar measure, again with the support of every auto safety advocate in America?

Mr. CURRY. Yes.

I think we are essentially in agreement on many of these things.

Looking at S. 673, it mentioned that it wanted a dynamic side impact standard. We completed the final rule on that in October of this last year. The bill talked about side impacts for light trucks. That final rule has been completed in our agency. It is now working its way through OST.

It mentions in S. 673 extension of standards to MPV's, roof crush, center high mounted stop light, automatic crash protection, head restraints, vehicle classification, rollover standard for MPV's, rear seat shoulder belts, booster seats. We have taken action on just about all of these, I think. I believe that you will find that your concerns in fact have been addressed and, hopefully, satisfactorily for you.

Senator BRYAN. Well, I would acknowledge that certainly some progress has been made. But if you agree, as I gather from your testimony that you do, with what the bill seeks to accomplish, what is the objection? In other words, I find it somewhat disingenuous to profess one's commitment to auto safety—and you have certainly done some things which we have talked about and which I have acknowledged privately and publicly—and yet you come here to the CAFE hearings saying that your principal concern is safety, and yet there was a bill that was before us that enjoyed the support of everybody who was concerned with safety, and yet you opposed it.

My question I do not think has been answered. This bill, or one comparable to it, will be reintroduced. Would your position be different this year?

Mr. CURRY. Well, Senator, I would hope that the fact that we have just about addressed and done rules that are almost in final for part of them and for most of the others, I would hope you do not consider that disingenuous. I think we have tried very hard to go through it and to do that.

We felt that there was no need, basically, for the legislation because we can do most of the things that are already in there by rule making. We think we have the authority today to do that, and that's why we have, in fact, progressed to do many of those things that were in S. 673.

So, from the safety standpoint, we certainly support those concerns. I think our actions in pushing rules through on just about everything that was mentioned show our dedication and our good faith in, in fact, accomplishing what you had hoped to accomplish.

Senator BRYAN. Would you not agree, Mr. Curry, that prior to your arrival in the office, the record of the agency, as characterized by the very colorful comment of the Ranking Member, had been that of a "comic book agency." As I recall, I believe Senator Danforth said that. I want to give him full credit for that statement.

He is here to correct me if I have misquoted him.

But it strikes me that that is a rather compelling argument that we ought to require these things, because the policies of this agency are subject to the vicissitudes, I presume, of the Administrator who is there, and that public policy ought not to be crafted with reference to the occupant of the agency's administrative position but ought to be crafted in terms of what's best for policy.

Can you respond to that?

Mr. CURRY. Well, I would hope that I am not too deeply into the vicissitudes. I think I can say with a reasonable degree of confidence that since I have been the Administrator, we have been able to accomplish some things that were not possible in the past. Therefore, I would hope that you would join with me in doing more in the future.

I think we have a rather good track record for the last year and a half.

I think we have the possibility of doing some very fine things in the future, and you and your Committee certainly have been very supportive of that. I would hope that we can continue jointly to work together in the future and to get more done. Certainly I solicit your comments and thoughts in any directions that you think we should be moving.

Senator BRYAN. Mr. Curry, are you in a position at this point to commit your agency to advocating the fuel economy standards that may be recommended by the National Academy Study?

Mr. CURRY. I think that a couple of things have happened.

I think on the one side, we do have the standards listed in the current bill that we are discussing, which I think are toward the generous side of the ledger.

I think on the other side of the ledger, the automobile manufacturers have taken a position perhaps more conservative, I think more conservative.

You know, the real answer may be somewhere in the middle. We are hoping that, with the NAS study, we are going to get a study that is nonbiased, that is looking at it in as neutral a position, or from as neutral a standpoint as possible.

I am fully prepared to support the results of the NAS study. I will promise you that I will work very hard to attempt to get Secretary Skinner and the administration also to support those. I cannot guarantee that. But I can tell you fully that I would go on record as supporting those standards because we have asked them to do a nonbiased study.

I think we have to accept the fact that we may all be slightly unequally unhappy with the results of their study, and I am prepared to be unhappy with it but still accept it because I believe it will be a good faith effort and a good starting point for all of us in this discussion.

Senator BRYAN. So, at least from your point of view—let me make sure that the record is clear on this—you would be prepared at this point to commit to supporting the fuel economy standards that that study would indicate are achievable and feasible? That would be your position?

Mr. CURRY. I would be prepared to support it and also to do my very best to get the administration also to support it.

Senator BRYAN. Let me discuss one other area.

We saw a year or so ago, maybe it has been even a little less than that, a rather dramatic example of improvement in auto safety.

You will recall that there were two automobiles in Northern Virginia that were involved in a head-on collision. A trooper from the Virginia Highway Patrol at the time was quoted as saying that he expected to report two fatalities, and, much to his surprise—I am paraphrasing the essence of what he said—he came upon these two vehicles. The driver of each of them struggled to get out of the automobile and was virtually unhurt.

Upon examination, both automobiles had airbags.

You have indicated that safety is the primary concern. It strikes me that the evidence is compelling and overwhelming that airbags do provide for a safer vehicle. What is your position in terms of a rule making to adopt and require airbags, both for driver and passenger, in all vehicles?

Mr. CURRY. I should mention I think perhaps a little broader answer. I support completely the concept of airbags in vehicles.

I think a couple of good things have happened. As you know, this summer I made a trip to Japan and to Korea. We sat down with all of the major manufacturers in those countries. We discussed this subject at great length. Those manufacturers promised to me that they would very rapidly be publishing schedules showing the implementation of airbags in their vehicles.

I was not back in the United States three months before the Japanese car companies starting publishing those schedules. All of the companies now have shown where they are going in the future.

It appears to us right now that, by the year 1994, 90 percent of all cars sold in this country will have airbags. Therefore, it is very clear to me that we are moving in that direction.

I am not sure that regulation is needed.

I think the American public has already voted. They have voted that they are going to buy cars that have airbags and they are not going to buy cars that do not.

I believe all of the manufacturers, including those in Europe that I have visited, have that message very clearly. I think that is why we will see airbags, that in 1994 90 percent will have airbags.

I am not sure that you need regulation in that area. I certainly have been very public and very vocal in supporting airbags and in encouraging their installation.

Senator BRYAN. Mr. Curry, I am still not sure. Why not require it? If you agree that it is desirable, if the percentages that you indicate are accurate, then why not require it?

Mr. CURRY. I believe that there are such things as free market forces. I think we see them working very well in this case, where we, in fact, are getting airbags installed at a very fast rate.

We are getting that done rapidly, and I think that it is doing the job that we want done.

Senator BRYAN. Would you not agree that the American passenger fleet would be safer if all vehicles had airbags by 1994, that that is one thing we could do that would make it safer?

Mr. CURRY. Yes. I think so. I don't think that technologically you might be able to move that fast. But the answer is yes. I think it will make them safer.

I am in favor of it. I think it is a good idea. I do think in this case we could watch the free market work. It is working very well and they are moving very rapidly.

I do not believe in regulation for regulation's sake, and it seems in this case to me that it is going to happen.

Now let me give you another angle to this, and it is this. Today, airbags is the big thing. It may well be that a year from now we'll find something even better, and it may be that we are going to move in a slightly different direction than we are moving with airbags.

Basically, NHTSA is performance oriented. We are trying to save lives, and I think we are doing that. We may disagree, in fact, on how to go about it, but we certainly agree on the end result.

Senator BRYAN. Well, I must say that I don't find your argument very persuasive. If automobiles are safer with airbags, if 90 percent presumably are

going to have them by industry acquiescence, why would not the other 10 percent benefit by having them required, and why would it not be safer for the American public? You are concerned that this CAFE bill may impact safety. But everyone would acknowledge that a car would be safer with airbags for the passenger as well as the driver and you do not require them.

Mr. CURRY. Well, I think I have had very good result in getting 90 percent by 1994. I would say that I expect to get the other 10 percent. I don't think that is going to elude us. I think we will end up with it.

Senator BRYAN. That would be of little comfort to the 10 percent who do not have them in 1994.

But let me yield to Senator Gorton at this time.

Senator GORTON. Mr. Curry, I want to go back to the same basis for questioning with which the Chairman started, but I have a different question.

On page 3 of your statement, you say and I quote YOU. "Mr. Chairman, motor vehicle safety has always been NHTSA's first priority." On page 2, you indicate that the 1975 CAFE standards bill, by causing downsizing of the automobile fleet, is responsible for more than 1,300 fatalities and 6,300 serious injuries per year.

Would you recommend that we repeal the 1975 CAFE standards in order to increase automobile safety by increasing the size of cars back to a 1974 average with a reduction in economy to 14, 15, or 17 miles per gallon?

Mr. CURRY. My agency is already engaged in litigation on that subject. We are being litigated currently with the very same argument that you are presenting, and they are asking why shouldn't we repeal that or support repealing those laws and therefore save lives.

I think we are where we are. I do not believe we can change history. I think at the time, in fact it is a fact that at the time, there were considerations raised in 1977 saying that in our thrust for fuel efficiency, we may very well take lives and cause serious injuries because of the weight that will be taken from vehicles in downsizing.

Those are facts. That has actually happened. There are people who would be alive today had we not done that.

I think we are where we are. The tradeoffs have been made. I think this would be a poor time to review that. I think we ought to go from where we are today and go forward.

I believe that we can increase fuel efficiency. I believe we can do it without hurting people.

Therefore, I am committed to seeing that fuel efficiency increases are made in every way possible. We do not have, I don't think, any argument about doing that. I think our discussion only is probably the degree or the rapidity with which we move in the direction of fuel efficiency.

Senator GORTON. Well, that is a rather involved answer. But I gather the answer is that 1,300 lives a year is not a sufficient incentive to repeal an earlier CAFE standards bill, even though you seem to believe that that number of lives could be saved by going back to earlier non-standards.

Under those circumstances, what is the argument against a further CAFE standards bill? If it was worth it in 1975 because of other impacts, why isn't it worth it now? Why wouldn't you respond to a CAFE standards bill by saying that the average size of automobiles cannot be reduced, that you will just simply have to find a way to meet those standards in some other fashion?

Mr. CURRY. I do not agree at all that it was worth it in the past. I think that was a mistake that was made that should not have been made. But we made it. And I think we are where we are today.

I don't think, because we made a mistake in the past, that we must repeat that same mistake in the future. I think we have an opportunity to increase fuel efficiency and we can do that without hurting people. I personally think that is the course we should take.

Senator GORTON. Okay. Then it is your testimony, I take it—I think that is much more clear—just so we understand it, that it was a mistake, whatever our oil dependency, in the mid-1970's to have any mandatory requirement for increased fuel standards that might cause the downsizing of cars? That was a policy mistake and we may not be able to correct it at the present time, but it was just purely a mistake. I take it this country, then, would be better off with cars making 14 to 17 miles per gallon of gas because of the increased safety and the decreased number of injuries and fatalities which would result?

Mr. CURRY. Well, as the Administrator of NHTSA, my job is to stand up and do all that I can to save lives on our highways. That's my charter and that's my charge.

I have to do that.

There are always tradeoffs in public policy. The tradeoffs were made. The tradeoffs did result in deaths in the past, and are today.

I am not sure what the pressure is, but I see that we can in the future enjoy fuel economy gains through technology. We can do that and I think we can do it in a reasonably cost effective way.

I don't understand what the thrust is, though, to step beyond that threshold and to insist on gains that can only be made by more significant downsizing of vehicles and that resulting or being translated into serious injuries through that.

Senator GORTON. Well, then, you would support increased CAFE standards and a bill passed by this Committee if we prohibited downsizing cars as a method of reaching those goals and simply came up with whatever standards we felt could be met without any downsizing whatsoever? Then you would be here supporting the bill?

Mr. CURRY. I would be much more in favor if you gave the mission to the Secretary of Transportation and the Administrator of NHTSA to decide what those goals are. But the answer is I support completely the idea of fuel efficiency.

We may disagree on some of the fine tuning of the bill and how you do the bill. We certainly disagree on the fuel levels that this bill establishes. They do seem to be too rich.

However, I don't think my word has to be taken or my concerns have to be taken into account since the National Academy is going to do a study for us in which they are going to show us what they believe are reasonable target levels. I would encourage this Committee to wait until that happens before it, in fact, passes a bill that may turn out perhaps not to be as safe as it could be.

Senator GORTON. Will you be here testifying at some future hearing this year against increasing either the size or the weight limits for trucks?

Mr. CURRY. I'm not sure what the future holds. I do not at this time have any plans to be doing that. Of course, if I am asked, I will come and do my very best. But today, I do not have any plans to do that. No.

Senator GORTON. Because you don't think larger or more heavy trucks have anything to do with vehicle fatalities?

Mr. CURRY. I am not prepared to go down that road today with you because we have not completed our work in that area. So I cannot address that subject directly on.

I think whether you are talking trucks or talking buses or talking cars, motor cycles, anything that moves on our highways that has the potential of causing

death and injury has to be a concern to my organization. I think at the proper time we will have to address it, and I will be delighted to address it.

Senator GORTON. Okay.

But you have no present opinion as to whether automobile fatalities would be increased by having longer or heavier trucks on the road? You have no present opinion on the subject?

Mr. CURRY. I have some thoughts on it that I would not want to express because I am not comfortable that I have thought it through properly and I am not comfortable that I have the facts yet. When I have the facts, I would be happy to move in that direction.

That is what I am really suggesting with the NAS study. I am saying that we have the possibility, all of us, of getting some facts on the table that may not be comfortable to all of us, but really may be better facts than we are using today. I think we ought to wait and use those facts.

Senator GORTON. Thank you.

Senator BRYAN. Thank you very much, Senator Gorton.

Senator Danforth.

Senator DANFORTH. Thank you.

General Curry, when did we confirm you? Was it about a year ago?

Mr. CURRY. Lord, sir, it seems like about 20 years ago.

Yes, sir. I think it was the end of November, or somewhere around there.

Senator DANFORTH. Well, I remember talking to you at that time and I think I shared with you, maybe not in the language that was described by Senator Bryan, certain concerns that I had had with NHTSA over quite a long period of time. I had voiced those concerns on a number of occasions when you were before the Committee. I can remember very well our conversation. The gist of it was that I asked you about your commitment to traffic safety and highway safety and whether or not you saw your job as an opportunity to really do something and try to save lives and give a sense of direction and purpose to NHTSA. You told me at that time that your answer was yes, that that was your intention and that you were really very intent on it.

I want you to know and everybody else to know that I think that you have been a very fine Administrator of NHTSA and that you have justified the confidence that we showed in you. You have justified the statement of commitment that you made whenever it was, a year and a half or so ago. What you did on side impact protection is something that was about 10 years in coming from NHTSA, but you are the person who shook it loose. You got it done.

I want to say that I appreciate your work and I think you are doing a lot of good. I hope you are in this job for a significant period ahead because there is so much more to be done.

Now, just to clarify what the position of the administration is, first of all, last year, there was an amendment to the CAFE bill dealing with the installation of airbags and providing a credit, an extra credit, for automobiles that installed airbags on one side or on both sides. I think it was a 10 percent increase for the installation of airbags on both sides.

Does the administration have a position on such an amendment to a CAFE bill? If it does, what is the position?

Mr. CURRY. We think that that bill eminently makes sense. We feel that it will help to save lives. It certainly will encourage the manufacturers to do more in that direction, and we would support such an amendment.

Senator DANFORTH. Okay. Thank you.

Now there is a second amendment relating to flexible fuel vehicles and the idea was that if the automobile was made so that it could burn something other

than gasoline or any kind of mix of gasoline and some other fuel, then again there would be an adjustment to the way the computation was made in that it would get credit for burning the alternative fuel.

Are you familiar with that amendment?

Mr. CURRY. I am, sir. Yes.

Senator DANFORTH. Does the administration have a position on that?

Mr. CURRY. We would favor removing the cap. We think that this is a good direction to go, and it certainly will help address our fuel energy concerns.

Senator DANFORTH. So if the car company could make a car that could burn methanol or gasoline, whatever, then would the administration would favor adjusting the cap to reflect the gasoline that is burned, the oil product that is burned?

Mr. CURRY. Yes, very much so, because we believe that doing so would increase the incentive of the manufacturers to produce those kinds of vehicles, and we certainly are in favor of that.

Senator DANFORTH. Okay. Thank you.

Now, on an unrelated subject, do you have any kind of timeframe in mind for a final rule on passive restraints for light trucks?

Mr. CURRY. Those have completed my agency now. They are working their way through the system. I cannot give you an exact date, but I would say very, very soon it will be through.

I was active, realizing you would probably ask me that question today, yesterday in attempting to be sure it was on track. It is moving rather rapidly. I would expect it out. Yes, sir.

Senator DANFORTH. Okay. It's out of NHTSA right now.

Mr. CURRY. It's out of NHTSA and, hopefully, it will be out of the Secretary's office today perhaps.

Senator DANFORTH. Good. Then where does it go? Does it go to OMB?

Mr. CURRY. It goes to OMB. My track record—well, not my track record—the administration's track record with OMB has been exceptionally good these past 18 months. As you remember, they cleared the side impact for us in 3 weeks. So I would say to you that we will get good support from them.

Senator DANFORTH. Could you just put it on your desk calendar to, in two or three weeks, if you don't hear anything from wherever it is, ask about it?

Mr. CURRY. Out there in the swamp?

Senator DANFORTH. Yes.

Mr. CURRY. I'll give you a call, sir, in about two weeks?

Senator DANFORTH. Would you?

Mr. CURRY. Yes, sir.

Senator DANFORTH. Thank you very much.

Thank you, Mr. Chairman.

Senator BRYAN. Thank you, Senator Danforth.

I have just a couple of quick followup questions in response to your answers to Senator Gorton.

You indicated that you thought the 1975 CAFE legislation was a mistake. If you thought the 1975 CAFE legislation was a mistake, why would you be willing to support the results of the study which has been commissioned, which will undoubtedly recommend that some improvements in fuel economy could be made? That seems to be inconsistent.

Mr. CURRY. Sir, I don't think that the 1975 ruling or study or legislation was a mistake at all. You know, if you go back historically to look at what we did between that time and, say, 1980——

Senator BRYAN. If I misunderstood your testimony, let me give you a chance to correct me. I thought you had said in response to Senator Gorton that you thought the 1975 legislation was a mistake.

Mr. CURRY. No, not the legislation. Some of the decisions. Let me explain it to you and then you can sort of ask another question if you want.

Senator BRYAN. Sure.

Mr. CURRY. Between 1975 and 1980, we had about a 100 percent gain in fuel economy. I think that's great. Half of that gain came from technology improvements. Half of that gain came from downsizing of vehicles.

I think the part of it that comes from downsizing vehicles was a mistake. Now, I would not argue if you wanted to downsize a little bit. I'm not talking about that.

But, as you know, on the average, we took about 1,000 pounds out of vehicles. I think that was a mistake.

I'm saying that I would have supported at that time all of the technology gains we could get. I would not have supported, had I been here—and this is hindsight, which is never very pure and is rather self-serving—I would not have supported the other part, which was to downsize vehicles significantly.

For the future, if someone said to me what do you support, I would support any technology gain possible. I think that's the right way to go. Some minor downsizing I think is all right because you can adjust somewhat to that, but no significant downsizing for the future because it is very clear to me that that will result in deaths and injuries.

I just, in my present position, cannot support such a position.

Senator BRYAN. Well, your premise seems to be that smaller cars are inherently unsafe. I guess the logical followup to that would be—and later during the course of our hearing this morning our representative from Honda will talk, for example, about their Civic and one of the models that they have which gets something like 63 miles per gallon—to ask is that car unsafe?

Mr. CURRY. We are on record in the agency as saying that small cars are not inherently unsafe. That is in our car size and weight study, as you know, upon which this is based. We are very clear that we do not believe they are unsafe. There is no question that they are less safe, though, than larger cars, and there are tradeoffs to be made between the two.

Senator BRYAN. What discussions have you had with the manufacturers, Honda and others, who make smaller cars in terms of how they can make them safer?

Mr. CURRY. Well, we did some this past summer, as I mentioned to you, in which we discussed airbags which do help to make those cars safer. And, as you know, all of the safety regulations which apply to large cars in our country do apply also to small cars. And they will apply to small minivans, for example.

The new regulations coming out right now will make those cars safer, and we will work as hard as we can to make small cars as safe as possible, recognizing that they will, of course, at no time equate to a large car.

Senator BRYAN. But you are not saying, for example, that the Geo Metro, which is a highly fuel efficient vehicle, you are not suggesting that that is unsafe?

Mr. CURRY. Not at all.

I think that the marketplace deserves the opportunity to choose from that broad range of vehicles. Those are very helpful and handy vehicles for many Americans. So I do not at all oppose having those cars.

Senator BRYAN. But they are safe, in your opinion?

Mr. CURRY. As safe as we can make them under the current conditions. I would hope they would continue to be offered.

Senator BRYAN. I see that Senator Gore has rejoined us.

I would yield to him for a round of questions.

Senator GORE. I will not take my full round, Mr. Chairman, because I did just walk back in.

Mr. Curry, I heard your last comment. Your basic view, then, is that the marketplace ought to choose?

Mr. CURRY. Right.

Senator GORE. You ought to leave this up to the marketplace, then?

Mr. CURRY. Well, not exactly, because, as you know, the history of my agency is that we do a little bit more than that. We infringe on the marketplace all the time in that we are constantly adding safety regulations that we feel make cars safer.

So, from that standpoint, we are pushing as opposed to pulling in the direction.

Senator GORE. Why doesn't the marketplace take care of safety issues?

Mr. CURRY. Some safety issues it does and some it does not. In those areas where it does not, I think, then, that it is the Federal Government's role to move in that direction and to make happen what otherwise would not happen.

Senator GORE. Do you think the marketplace works well to cut down on consumption of oil?

Mr. CURRY. That's been a debate that will probably go on forever and has gone on for some time in the past.

Senator GORE. What do you think?

Mr. CURRY. I think that it does in some degrees and I think in other degrees it does not. I think it is a very mixed bag. I guess that's what I'm saying to you, Senator.

Senator GORE. How does the marketplace represent the costs of air pollution? When you buy a gallon of gasoline, how does that marketplace decision reflect the cost that you and I both pay as a result of the pollution which results?

Mr. CURRY. I'm not sure I really understand the question.

Senator GORE. Well, you are advocating that for fuel economy, the marketplace should be allowed to solve the problem. So the question is partly theoretical. It is partly theoretical, but it is sincere. I am not being sarcastic in this. I think the answer is that it does not take care of the problem.

But the point of the question is to try to elicit from you a discussion of how your preferred method is going to operate. If the marketplace mechanism is the one on which you rely to handle fuel economy, how does the marketplace reflect in the purchase of gasoline the cost to society and to people who live here in this country that comes about as a result of the pollution?

Mr. CURRY. I think that that question probably could be better answered by the Secretary of Energy than by me or perhaps by EPA. But I would like to go from that directly to what I'm talking about, which is safety and fuel economy.

I would say to you that, as I see it, there is a role for government to play in most areas, and that is why, on the safety side of the ledger, I think that there are some things that the marketplace, in terms of safety, handles very well.

For example, it is very clear that the marketplace is handling for us very well the installation of airbags today. But yet, that same marketplace did not handle very well the installation of seat belts in 1984, for example. And I think the Federal Government had to take a major role in pushing that to make it happen.

I am no fuel economy expert in terms of the market forces and all of that and I don't pretend to be, but I would guess that it's probably a mixed bag also there. From my little, narrow viewpoint, I am in favor of doing whatever is required to increase fuel efficiency, provided we don't hurt people.

You were not here earlier, but I already said publicly that I think we can get increased fuel efficiency, we should, and the government does have a role to play in that. Certainly, when the National Academy of Sciences comes out with its study this summer, I am prepared to stand by its findings and to do my very best to persuade the administration to accept those findings.

Senator GORE. Well, to the extent that we decide the marketplace, which is always the option of choice—it is always the best way to solve a problem, I believe, if it will solve the problem—to the extent we discover that the marketplace will not, for various reasons, solve this particular problem, then that strengthens the case for supplementing market forces by saying look, we have a national interest which is not now being accounted for in the rules we are applying to the market, which must be accounted for. And so, we have to have some kind of legislation, whether requiring higher mileage directly in a fair way, or with carbon taxes in a fair way, or both.

I will be talking about that as this debate continues.

I will yield back the balance of my time, Mr. Chairman.

Senator BRYAN. Thank you very much, Senator Gore.

General Curry, thank you very much for your testimony.

Mr. CURRY. Thank you, Mr. Chairman.

Senator BRYAN. Would you please supplement the record. You don't have it right here, perhaps, but you have indicated that 90 percent of the vehicles are going to have airbags by the year 1994. If you will identify the manufacturers and the vehicles, we would appreciate it.

Mr. CURRY. Yes, sir. I would be happy to do that.

[The information referred to follows:]

For model year 1991, NHTSA has prepared a model-by-model list of air bag installations, which is appended to this answer. As the list shows, several manufacturers — BMW, Chrysler, Isuzu, SAAB, Toyota/Lexus, Audi, and Volvo — are installing driver air bags in all models in 1991, and Porsche is installing both driver and passenger air bags in all models. Altogether, air-bag equipped vehicles comprise 30 percent of the model year 1991 fleet. Additional models will have air bags in later years, but we do not have model-specific information beyond 1991.

For the mid-1990's, NHTSA's estimate that 90 percent of passenger cars will have air bags is based on the manufacturers' public statements about their plans:

Chrysler, with driver air bags already installed in its entire domestic fleet, intends to have passenger air bags as well by the mid-1990's.

Ford has stated that it will install both driver and passenger air bags in its entire fleet by the mid-1990's.

General Motors has announced that it will install driver air bags in all domestically produced vehicles by 1995 and that it will begin installing passenger air bags in some 1992 models.

Honda has announced that it will install driver and passenger air bags in all Honda and Accura models by model year 1994.

Mercedes Benz already equips all U.S. models with driver air bags and will install passenger air bags in all U.S. models by model year 1994.

Nissan intends to install driver air bags as standard equipment and to make passenger air bags either standard equipment or an option on all passenger cars by the 1994 model year.

Toyota expects to covert its entire fleet to driver air bags by 1995, but has set no date for the installation of passenger air bags.

The plans announced for additional models, together with the models already equipped with air bags, should account for about 90 percent of domestic passenger car sales in the mid-1990's. A few smaller manufacturers have not announced plans to install air bags, but may yet do so.

Senator BRYAN. Thank you very much. We appreciate it.

Mr. CURRY. Sir, thank you for inviting me here. I always appreciate the opportunity to be here.

Senator BRYAN. Thank you.

Our second panel this morning will consist of Mr. George Eads, the Vice President, Product Planning and Economics Staff of General Motors; Mr. James Olson, Vice President, External Affairs, Toyota Motor Sales U.S.A.; Mr. Ron

Boltz, Vice President, Product Strategy and Regulatory Affairs of the Chrysler Corporation; Mr. Jerry Benefield, President and Chief Executive Officer, Nissan Motor Manufacturing Corporation U.S.A.; Mr. Thomas G. Elliott, Executive Vice President, Auto Operations, American Honda Motor Corporation; and Mr. Peter J. Pestillo, Vice President, Corporation Relations and Diversified Businesses, Ford Motor Corporation, World Headquarters.

Gentlemen, welcome to the subcommittee. We appreciate your attendance here this morning.

Let us begin with testimony from Mr. Eads. Mr. Eads.

STATEMENT OF GEORGE EADS, VICE PRESIDENT, PRODUCT PLANNING AND ECONOMICS STAFF, GENERAL MOTORS CORP.

Mr. EADS. Thank you, Mr. Chairman.

I am George C. Eads. I am Vice President of General Motors Product Planning and Economic Staff. I appreciate the opportunity to testify on S. 279.

We understand and appreciate the concerns that motivate the consideration of this bill at this time, concerns over energy security and over the possibility that emissions of greenhouse gases, including the carbon dioxide produced from the burning of fossil fuels may lead to global climate change.

Our objections to S. 279 are not based on any disagreement with these concerns but, rather, on our belief that its enactment will not promote energy security and will do very little to reduce greenhouse gas emissions.

All of this is not to say that GM will be unable to continue to offer our customers higher fuel economy. Our Geo Metro offers the highest fuel economy of any vehicle now sold in this country. This year, we introduced our Saturn family of fuel efficient subcompact and compact cars, and later this year we will introduce redesigned models of our best selling lines of compact cars.

We have three multi-valve engine families and two electronic transmissions, more than any other domestic manufacturer.

Next quarter we will produce our first natural gas powered trucks. We are committed to producing the Impact electric vehicle and currently chair the recently announced U.S. Advanced Battery Consortium.

We have aggressive R&D programs in alcohol fuels, two stroke engines, gasoline turbine engines and fuel cells.

Some proponents of higher CAFE standards attribute virtually all of the approximate doubling new car fuel economy achieved since the mid-1970's to the existence of CAFE. This increase, it is sometimes asserted, is responsible for gasoline savings equivalent to 2.5 million barrels of oil per day.

It is further asserted that savings of as much as an additional 2.5 million barrels per day would occur if only we would raise CAFE standards by another 40 percent.

These claims, however, are based on the belief that the Federal Government can control gasoline consumption merely by regulating the fleet of vehicles supplied by manufacturers. Such a belief, however, does not consider the essential role that decisions made by millions of individual consumers play in determining both company CAFE levels and fuel consumption.

One should not underestimate this role. Several studies have concluded that the increase in new car fleet fuel economy experienced prior to the mid-1980's can be accounted for largely by the effects of higher fuel prices on consumer behavior.

More recently, CAFE standards have been binding on full line manufacturers like GM and may have raised the fuel economy of the new car fleet somewhat,

perhaps by 1 to 1.5 miles per gallon if one recent study of the CAFE program is to be believed.

But even this increase in new car fuel economy has produced a very small decrease in fuel consumption, less than 3 days' worth over a 6 year period, according to this same study.

Why such small savings? Because CAFE regulation is working against powerful market signals, rather than with them.

For example, mandating higher fuel economy has the effect of encouraging those customers who purchase a more fuel efficient car to drive more because, absent offsetting increases in fuel prices, their per mile cost of driving declines.

Other aspects of the CAFE program have reduced and will continue to reduce its fuel saving potential still further.

Looking forward, the truth is that it will not be possible to achieve the sorts of increases in CAFE proposed in S. 279 without substantial changes in the mix, size, or utility of the vehicles offered to consumers. Supporters of S. 279 claim that it will be possible to achieve the large increases in fuel economy contemplated by the bill without changing the size composition of the fleet merely by incorporating certain off-the-shelf technologies at little or no net cost to consumers. Such claims merit considerable skepticism.

The fleets of full line manufacturers are dominated today by compact, mid-sized and full-sized cars. If it were possible to produce cars in these size classes with an average fuel economy of about 40 miles per gallon using currently available off-the-shelf technologies, we would expect to see them already being sold in overseas markets, where gasoline today costs 2 to 4 times as much as it does in the United States.

Instead, we find that the average new car fuel economy in such countries is somewhat higher than is the case in the United States. But this difference is explained by the fact that in these countries, smaller cars constitute a much larger share of the fleet and typically lack many of the features that American drivers have come to expect, such as automatic transmissions and air conditioning.

The lower figures on automobile fuel user per capita reported for these countries—for example, it is 40 percent of the U.S. level in Germany, 20 percent in Italy and 20 percent in Japan—are more due to the fewer miles driven per car per year and to the fewer cars per capita than to higher average vehicle fuel economy.

As I have already indicated, a higher CAFE would have a counterproductive effect on miles driven per year. It would impact the number of cars per household only by raising the price of cars.

In the future, modest increases in fuel efficiency may be possible by more widespread use of some existing technologies within the new car and new truck fleets. Even these increases will be difficult to achieve, however, because of the many new emission, safety, and other regulations and engineering tradeoffs confronting the industry.

The modest increases achieved will fall far short of the levels proposed by S. 279. Furthermore, inducing consumers to accept these new technologies won't be easy in an environment of relatively low fuel prices.

Let me illustrate with an example.

Suppose that we somehow could increase the average fuel economy of each of our market segments by about 20 percent over the next decade while still producing cars that were both affordable and that met the needs of our customers. Even with such an increase, meeting the year 2001 target in S. 279 of a 40 percent improvement in new car fuel economy for the entire fleet would require that the market share of small cars increase from today's roughly 20 percent to nearly 75

percent. Such large changes in the composition of the fleet would result in dramatic losses in the utility that new vehicles can provide consumers, would reduce highway safety, and would imperil hundreds of thousands of auto industry jobs.

In conclusion, we at General Motors strongly oppose S. 279 and believe that any action on CAFE standards is premature, especially in view of the National Academy of Sciences study commissioned by DOT on fuel economy technologies and economic practicability.

The legislation will produce energy savings far smaller than those claimed by its proponents and, thus, have a negligible impact on greenhouse gas emissions.

I want to repeat that it will not advance U.S. energy security.

Against these results ought to be balanced their considerable costs, and we believe, therefore, that a proper accounting of the potential gains and losses arising from the bill should lead to its rejection.

Thank you.

[The following information was subsequently received for the record:]

GENERAL MOTORS CORPORATION,
March 6, 1991.

The Honorable Richard H. Bryan,
Chairman, Consumer Subcommittee, Committee on Commerce, Science, and Transportation, Washington, D.C.

Dear Mr. Chairman:

We appreciate the opportunity to supplement our February 21 testimony on S. 279, the proposed "Motor Vehicle Fuel Efficiency Act." I am enclosing for the record a number of documents that elaborate on some of the points we tried to make during the hearing.

In addition, we would like to be sure the subcommittee is aware of the severe economic circumstances confronting the domestic motor vehicle industry. We believe Congress should take into account the extraordinary pressures we face as you consider S. 279 and other legislation that would mandate significant increases in the CAFE standards. The hearings held, thus far, make it clear that the standards would have a particularly serious adverse impact on consumers and those who work in our industry.

The motor vehicle industry and its employees already are experiencing severe problems. In the past four years, General Motors' employment in the United States has dropped by almost 116,000 jobs. On February 1, we had about 30,000 more people on indefinite layoff and another 30,000 on temporary layoff. Dealer retail orders have virtually dried up despite record incentives to lower the actual purchase price, and massive production cuts have occurred in the first quarter of this year. GM could lose nearly a third of our sales volume in 1991 if the current sales rate continues.

General Motors lost over $1.6 billion in the fourth quarter off 1990. We do not believe end to the war in Kuwait will mean the domestic industry can assume its problems are behind it. The competition in the North American market is extraordinary with 26 manufacturers from around the world, producing 40 brands off cars and offering nearly 600 models. Responding to current economic conditions and the need to remain an effective competitor, GM has had to continue aggressive costcutting measures. This includes reducing the salaried workforce by 15% over the next three years, reducing our dividend to stockholders, and reducing capital expenditures.

Unfortunately, while U.S. auto companies are meeting their stiffest competition ever, we are also confronting extra-ordinary challenges from existing and prospective regulatory requirements. This is especially true in the provisions of the 1990 Clean Air Act Amendments and the regulations that are likely to follow. Indeed, we are facing an unprecedented set off regulatory and other requirements that will put a considerable burden on our engineering resources, add costs and put additional pressure on our prices at a time when consumers are particularly price sensitive.

For example, we estimate that compliance with the stationary source environmental requirements in force just in 1989 will cost General Motors approximately $1 billion over the next 7 to 10 years. The stationary and mobile source requirements off the Clean Air Act are expected to add significantly to those costs. In passing this law, Congress granted the Environmental Protection Agency new powers to regulate the manufacturing operations and products of our industry. The mobile source provisions off the Clean Air Act include tighter tailpipe standards by the 1996 model year, a doubling off the useful life requirements for emissions warranties to 10 years and 100,000 miles by 1998, and the possibility of tougher tailpipe standards in later years. It also is possible that EPA will require the industry to equip vehicles with systems to capture refueling vapors.

We face a host of other regulatory requirements resulting from the Resource Conservation and Recovery Act, as well as accelerated requirements under the Superfund legislation. Some proposed motor vehicle safety regulations are likely to impact vehicle design and engineering in ways that will

add weight, and therefore offset fuel economy improvements made elsewhere. Meanwhile, a new luxury tax has been imposed on vehicles; because it was not indexed for inflation, the tax will have an increasingly adverse affect On car sales and consumers.

Our pupose in raising these issues in this context is not to dispute the wisdom of these various regulatory and other public policy initiatives. We are dedicated to meeting the requirements of the law and our societal responsibilities. Our industry has an outstanding record of meeting the challenges that society has presented. Rather, our purpose is to alert you and your subcommittee to the severe challenges facing the industry and the extreme difficulties that will result from imposing the CAFE standards incorporated in S. 2798.

Again, we appreciate the opportunity to supplement our statement for the February 21 hearing record. Attached are aditional materials that we believe will be helpful to the Committee in considering the CAFE legislation. They include GM's statement on developing a national energy strategy; previous correspondence we have had with you that explains more fully why we believe the CAFE program has not been particularly effective in saving energy; and GM's statement of December 10, 1974 that was reference during the February 21 hearing.

Sincerely,

David R. Thornbury, General Director.

Enclosures (3) [1]

Senator BRYAN. Thank you very much, Mr. Eads.

We will hear next from Mr. James Olson. Mr. Olson.

STATEMENT OF JAMES OLSON, VICE PRESIDENT, EXTERNAL AFFAIRS, TOYOTA MOTOR SALES U.S.A.

Mr. OLSON. Thank you. I am Jim Olson, Vice President of External Affairs, Toyota.

Thank you for giving Toyota the opportunity to convey its views on S. 279.

My testimony this morning will focus on Toyota's commitment to fuel economy, the unrealistic fuel economy targets contained in S. 279, and the likelihood that the differential standards approach upon which the bill is based will not achieve the predicted fuel savings.

Toyota does not oppose product improvement, including fuel efficiency gains. In fact, our U.S. product line employs most of the energy efficient technology identified by the Office of Technology Assessment. That is why our CAFE is historically the best of any multi-line auto maker doing business in the United States. /

Our smallest car, the Tercel, is a good example. We just introduced a totally new version, lighter than the old model, with a fuel injected multi-valve, overhead cam engine, front wheel drive and leading edge aerodynamics. It has significantly more room and gets about 6 percent better city fuel economy than the model it replaced.

However, the Tercel also demonstrates the impossibility of meeting the unrealistic CAFE targets proposed in S. 279 without significant downsizing or technological breakthroughs, which we do not at this time foresee. Tercel is the lightest, least expensive, and most fuel efficient car line we sell. It contains all the fuel economy technology Toyota currently knows how to apply to vehicles of this size and price class.

Yet, Tercel's CAFE rating of 3S. 3 mpg is more than 4 miles per gallon less than the entire Toyota fleet would have to average by 1996 under S. 279.

Mr. Chairman, Toyota is not hiding some magic technology. If we had it, we'd use it to gain a competitive advantage in Japan, where gas is $4 a gallon.

We can and do use technology to make cars more fuel efficient. For example, we built a hand-made, experimental vehicle to demonstrate the highest level of fuel economy we could achieve. But it uses very expensive materials, has little baggage space, and disregards U.S. safety and emission standards.

The point is we have to consider many needs—emissions, safety, fuel economy, utility, and, perhaps most important, price.

[1] The enclosures were not reproducible and are in the subcommittee files.

Many families who need larger vehicles won't be able to fit into or afford those you will design with this bill. Instead, they will keep their old cars longer, frustrating energy conservation.

Let me now turn to the most perverse aspect of the bill, the differential standards approach used to determine each company's CAFE.

First, this approach would assure that fuel efficiency leaders, like Toyota, would be legislated out of certain market segments, greatly reducing the competition that drives all technology, including fuel economy.

With all due modesty, if you want a fast race, you do not disqualify the pacesetter. S. 279 would replace many of the most fuel efficient vehicles with less fuel efficient vehicles. We fail to see how that would improve fuel economy.

Second, different standards for different companies penalize those who have done the most. Never again will any company have an incentive to exceed regulatory standards for fuel economy, emissions, or safety, lest that performance become the baseline for discriminatory new government standards.

Third, assuming S. 279 includes a credit program, a company achieving 28 miles per gallon in 1996 could be rewarded with credits, while Toyota would be penalized for achieving 39 mpg, 6/10 of a mile short of its standard. The competitive logic escapes me.

Our final concern with the structure of S. 279 pertains to its new section 516. In an attempt to provide limited flexibility to DOT to modify the differential standards, this section appears to require a manufacturer by manufacturer determination.

Toyota supports giving DOT flexibility to adjust the standards. But, again, like the standards themselves, any adjustment should apply to the entire industry, not to individual manufacturers.

In short, S. 279, as currently structured, is simply not good energy conservation policy.

By contrast, an approach that established CAFE goals based on vehicle size or market segment would retain some choice for car and truck buyers and would more effectively conserve energy by driving technology across each segment.

Some have criticized this approach under the mistaken belief that manufacturers would simply make bigger cars and avoid the more stringent fuel economy requirements.

Market history says this won't happen. As Mr. Eizenstat noted, small, fuel efficient cars are where you capture new buyers, that then stay with you. No multi-line manufacturer would abandon those segments.

But procedures to insure significant fuel efficiency increases could be put into place. For example, an additional "sipper" credit for vehicles that significantly exceed the standard in any segment will induce manufacturers to better the standard in each particular segment or class.

Toyota will not oppose a reasonable CAFE program. However, we believe any new CAFE program should improve overall fuel efficiency, drive technology across all model lines, retain the product choice consumers need, and, to the extent possible, not give one company an advantage over another.

We believe there are better and more effective ways to achieve these goals than S. 279.

Thank you again for this opportunity.

[The statement follows:]

STATEMENT OF TOYOTA

Toyota appreciates the opportunity to submit its views on S.279.

We at Toyota take pride in the fact that historically we have been the fuel economy leader among multi-line companies. Since the CAFE law was passed in 1975, Toyota has consistently exceeded the

standards set forth in the law in large measure because of our continuing commitment to aggressively employ fuel economy technology. We are not against improved fuel efficiency. We are against unrealistic, anti-consumer and anti-competitive fuel economy standards as embodied in S. 279.

As evidence of our commitment to improving fuel efficiency, one need only look at our new 1991 Tercel. This totally new 1991 version is lighter than the old model with a fuel injected multi- valve overhead cam engine, front-wheel drive and leading-edge aerodynamics. It has significantly more interior and cargo space and gets about six percent better city fuel economy than the model it replaced. It is with this background of responsibility for producing highly fuel efficient vehicles that we express our concerns about this bill.

Our objections regarding S. 279 are twofold: (1) it would, for the first time, impose different standards for different companies with the unintended consequence that less fuel efficient vehicles will replace more efficient vehicles; and (2) the stringency of the fuel economy standards mandated by these bills would result in a significant downsizingg of today's new car and truck fleet (including the total elimination of certain model lines) and the use of costly and yet untried technology.

We believe the best method to address energy conservation and global warming is a program that addresses broad sectors of the economy and does not simply focus on motor vehicles. Such a program should be built around marketplace components. One approach that appears to have merit is a carbon or greenhouse fee, which would encourage energy conservation in all sectors of the economy. A carbon fee would also address the issue of increasing vehicle miles traveled, which cannot be addressed by CAFE-only legislation. Congress should carefully consider such a fee as it attempts to formulate energy conservation/global warming policies.

S.279 FUNDAMENTALLY FLAWED AND WILL NOT ACHIEVE ITS DRESSED GOALS

By requiring each company to improve its CAFE 40 percent by 2001 from its 1988 level, S. 279 arbitrarily creates different standards for different companies. This differential standards approach signals a radical departure from past government policy of requiring all companies to meet the same standard. It inaccurately assumes each manufacturer has employed the same technology in the same base year. The anti-competitive effects of this approach would serve to undermine the expressed energy conservation and environmental goals of the bills, in addition to preventing consumers from having a price-competitive range of products from which to choose.

The Department of Justice agrees with this analysis, stating, in part, in a letter to Senator Bryan on S. 1224 (which is structurally similar to S. 279), "... competition would suffer and the fuel efficiency of a whole category of vehicles could be kept artificially low."

Proponents of the uniform percentage increase approach used in S. 279 assert that it will achieve the most fuel saving/CO2 reduction, since all companies would be forced to increase fuel economy levels by a given percentage. This assertion is incorrect.

Companies that have applied high levels of technology will be forced to significantly downsize vehicles and apply a high degree of expensive and as yet untried technology. The type of vehicle a customer buys is dictated largely by family and economic considerations. A family of five needs a family-sized vehicle; they are not going to buy a subcompact. If high-mileage manufacturers like Toyota are forced out of certain car lines that family will still buy a family vehicle, but a lower fuel economy model. We fail to understand how that advances fuel savings.

Competition among manufacturers spurs technological innovation. But penalizing technological leaders like Toyota by forcing them into a narrow market segment is antithetical to the advancement of fuel-economy technology across all classes of vehicles. Congress should encourage technological innovation across all model lines. Increasing the difference between high- and low-mileage manufacturers, as mandated by this bill, is counterproductive. Competition will be reduced across market segments, thereby removing the incentive for widespread application of best available technology.

S.279 also punishes manufacturers that have made the greatest technological advances. Because we currently employ most, and in some cases all, of the technology predicted to be available by 1995, Toyota has used up most or all of the relatively "easy" room for improvement (see attachment I). Those companies which have not employed these technologies for whatever reason, are rewarded by not only having to improve less than Toyota on a numerical MPG basis, but are able to make up this smaller number by using "off-the-shelf" technology that Toyota currently employs

In addition to this fundamental flaw, the new regulatory program that would be established if S. 279 were to be enacted would mark a radical departure from other regulation of the automobile industry. Until now, all emission, safety and fuel economy standards have been applied to manufacturers in an evenhanded manner. The government set a single standard and each company had an equal responsibility to meet it. Emission standards for passenger cars and light-duty trucks under the Clean Air Act are expressed in grams per mile. This applies to all vehicles regardless of manufacturer. Vehicle safety standards under the National Highway Traffic Safety Act are performance standards that apply to all vehicles regardless of manufacturer. The theory underlying these statutes is that emission control and vehicle safety should not differ between manufacturers. This is prudent policy. It lets consumers dictate the terms of competition — not the government. On the other hand, S.279 would, for the first time, create different standards for different manufacturers — a perverse result in which those that have pioneered fuel economy would be penalized for their efforts. @PARA8 = This manufacturer-specific standard approach would destroy the incentive for any manufacturer to do

better than the applicable standard for future years. Moreover, if enacted, S. 279 would set a very dangerous precedent in this industry, as well as for other regulatory programs, since affected companies would be wary of voluntarily performing at levels better than those specified in any law or regulation for fear that this may become the baseline for future standards. This would be contrary to the task of cleaning the environment, promoting safety and conserving energy.

SECTION 516

In an attempt to provide limited flexibility in modifying the percentage improvements required in previous versions of this bill, S.279 adds a new Section 516. This section provides limited authority to the Secretary of Transportation to reduce the required percentages to 15 and 30 percent respectively, according to certaln criteria. As drafted, this section appears to require a manufacturer-by-manufacturer determination, since the bill creates manufacturer-specific standards. Each of these rulemaking procedures will be the subject of intense action by all other competing manufacturers. NHTSA will be overwhelmed with endless rulemaking and litigation.

The manufacturer-specific percentages that could occur as a result of implementation of Section 516 further demonstrate the fundamentally flawed nature of S.279. There is a distinct possibility that manufacturers with lower 1988 mileage levels could obtain a relaxation in the required percentages but higher mileage companies would be required to meet the original levels. Toyota supports giving DOT flexibility to appropriately adjust the standards. But, again, like the standards themselves, any adjustment should apply to the entire industry, not to individual manufacturers.

CREDITS

Another potential problem with the bill as drafted is that it can be read to eliminate the credit program contained in the current law. If so, it would eliminate any remaining incentive for a manufacturer to perform better than the law requires.

Assuming a credit program is to be included in this bill, the differential standards that will occur lead to another perverse result. It is possible that a company achieving a 28.0 mpg level in 1996 could earn credits, while Toyota could be penalized if it achieves 39 mpg yet falls short of its 39.6 mpg standard. Quite candidly, Mr. Chairman, such an anomaly is more than unfair it makes no sense. This result further demonstrates the flawed structure of S.279.

THE STANDARDS MANDATED BY S.279 ARE TOO STRINGENT

S.279 is based on the belief that 40 percent increases in CAFE levels can be achieved without reducing the size and performance of the new car and truck fleet below 1987 levels simply by employing existing technology. As a world leader in employing fuel-economy technology, we do not believe that is the case.

In testimony submitted to this Subcommittee on May 2,1989, the Congressional Office of Technology Assessment (OTA) found that Toyota's fuel economy level for Model Year 1988 significantly exceeded the level that could have been expected from its model mix. In other words, Toyota's high fuel economy levels are not simply due to the size of our vehicles. Toyota achieves high fuel economy because our current vehicles employ most, and in many cases all, of the technologies OTA said will be available industry-wide by 199S. Toyota has made a substantial financial commitment to improve fuel economy through the application of advanced technology.

It is true that incorporating the technology suggested by the sponsors of this legislation will improve the fleet's fuel efficiency. "What is at issue is the amount of improvement that can be obtained using this technology without significantly downsizing the new car fleet and thereby jeopardizing the size, utility and performance available to (and demanded by) today's consumer.

An examination of the technologies referenced by supporters of S. 1224 in the 101st Congress demonstrates that a 45 mpg CAFE standard (which would be required of Toyota under this bill) cannot be met without significant downsizing and the outright elimination of certain model lines. As can be seen by examining Attachment I, we have already applied the overwhelming majority of the suggested technologies and at very high penetration levels. We fail to understand how we can meet a 45 mpg CAFE standard without downsizing when compact cars currently on the market using essentially all the recommended fuel economy technology do not meet the standard.

Even though Toyota uses multi-valve engines, multi-point fuel section and overhead cam engines in 100 percent of its new car fleet (plus a host of other technologies), we are not resting on our past technological advances. For example, Toyota currently uses lean-burn engine technology in small cars in Europe. Our estimate is that this technology can achieve a 10 percent increase over comparable gasoline engine technology. Inherent to lean-burn design is an alteration of the air-fuel mixture to the lean side. Unfortunately, this causes an increase in NOx emissions and limits the use of three-way catalyst technology. At this time Toyota does not believe this technology can meet the 0.4 gpm NOx standard which is required in the mid-1990s under the Clean Air Act Amendments of 1990. If the "Tier H" emission standard for NOx is imposed after 2003, the use of this technology will likely be foreclosed completely.

Thus, one of the most promising fuel economy technologies may soon be effectively foreclosed. Nevertheless, our active research programs to improve fuel economy will continue and we anticipate

incorporating new technologies to improve the fuel efficiency in our vehicles once they are practicable.

THE REQUIREMENTS OF ANY CAFE LEGISLATION SHOULD SERIOUSLY CONSIDER THE ON- GOING NATIONAL ACADEMY OF SCIENCE STUDY

NHTSA has recently announced that it has engaged the National Research Council of the National Academy of Sciences (NAS) to study the level of fuel economy increase that is achievable by each class of passenger cars and light-duty trucks Given the controversy surrounding recent fuel economy studies, it seems prudent to wait until the results of the NAS are released. This is particularly true in terms of future truck fuel economy levels. To our knowledge there is no technological basis suggesting manufacturers can comply with the percentage improvements for trucks required in S.279. The NAS study will examine technical questions while considering factors such as more stringent emission standards as a result of the Clean Air Act Amendments of 1990, new safety standards, and likely consumer needs.

S.279 has reached conclusions regarding the fuel economy levels that can be achieved based on questionable analysis. The National Academy of Sciences study will provide a rigorous analysis of the technological capabilities for each class of vehicles. Toyota urges the Subcommittee to take this study into account before moving forward with any CAFE legislation.

Our recommendation to consider the NAS is not to delay Senate consideration of fuel economy. Rather, we believe an independent analysis of what can be done to improve fuel economy is an important element currently missing from this debate.

ALTERNATIVE PROPOSALS TO DIFFERENTIAL STANDARDS APPROACH SHOULD BE CONSIDERED

As noted above, Toyota believes broad market-based approaches, such as a carbon fee, are the most effective means of reducing the amount of fuel consumed and stimulate the sale of fuel-efficient vehicles. Nevertheless, if the Committee decides to ultimately pass a CAFE bill independent of broad-based energy policy/conservation alternatives, there are several criteria that should be applied to my such legislation. These are:

To the extent possible, no company should gain an advantage over any other company by virtue of the type of program selected.

Fuel economy technology should be advanced across all classes of vehicles.

The fuel efficiency of the fleet of new cars and trucks should increase.

The product choice and utility customers want and need from their vehicles should be retained.

S. 279 fails to meet all of these criteria. It arbitrarily creates different standards for different companies, and has the potential to apply different percentages to different companies. By forcing the reduction or elimination of the most fuel efficient vehicles out of certain markets and by discouraging companies from exceeding standards for fear of being penalized in the future, S. 279 will not achieve the stated conservation goals. It will limit product choice for consumers. And finally, S.279 will not require the application of best available technology across all classes of vehicles for all manufacturers.

One alterative that takes these criteria into account is a size/class or market segment-based program with percentage or mpg increases required for each vehicle segment or size category. This approach would be vastly preferable to the differential standards approach contained in S. 279, as all manufacturers would be forced to compete car-for-car in the categories they produce. A size- or market segment-based program could be designed with procedures to insure significant fuel-efficiency increases while allowing companies to move among categories in response to consumer demand. Examples of mechanisms that would enhance fuel-efficiency improvements include: additional credits for increased sales of vehicles in small vehicle classes, and a "sipper" credit for vehicles that significantly exceed the standard for any market segment.

Another approach which the Subcommittee may want to consider is a volume average standard. It is our understanding that both DOE and OTA have analyzed this approach, thus, it too may merit close examination by the Subcommittee.

Toyota believes disregarding market forces could lead to unintended results. However, if the Subcommittee is intent on changing the current CAFE program, it should do so in a way that encourages the use of the best technology across all model lines and allows the consumer to select the most efficient model in each segment — guaranteeing fuel savings through competition. Toyota thanks the Subcommittee for the opportunity to present its views on this important subject, and we hope to work with the Subcommittee as it addresses issues involving energy conservation and global warming.

Mr. BRYAN. Mr. Olson, we thank you very much for your testimony. We will now hear from Mr. Boltz.

STATEMENT OF RONALD BOLTZ, VICE PRESIDENT, PRODUCT STRATEGY AND REGULATORY AFFAIRS, CHRYSLER CORP., HIGHLAND PARK, MI

Mr. BOLTZ. Thank you, Senator. Chrysler Corporation appreciates the opportunity to appear before the Consumer Subcommittee to present our views on S. 279. In many respects S. 279 is similar to S. 1224 introduced in the 101st session of Congress.

Chrysler testified before this subcommittee on two occasions, May 2d and September 7th of 1989. We believe our prior testimony also applies to S. 279, and for brevity we will not repeat these comments today, other than to include them by reference.

We also had the pleasure of meeting with Senator Bryan and subcommittee staff members in Highland Park, Michigan, on July 9th of 1990. We discussed Chrysler's forward product plans and the fuel efficiency improvements associated with these plans.

My message today is simple. Technology exists to improve fuel efficiency of passenger cars and light trucks. We will continue to apply these technologies and expand their use in future Chrysler products. The CAFE effect of these technologies, however, will depend on future consumer acceptance of some of these technologies. And fuel prices. And vehicle size mix, as well as the effects of new vehicle safety and emissions standards.

S. 279 continues the debate about CAFE potential of existing technologies. The committee last year relied on several authorities in setting the 20 and 40 percent CAFE increases proposed in S. 1224. The committee report cited the Department of Energy and its contractor, EEA, among others. EEA recently qualified its study conclusions. Quoting the author, the DOE/EEA analysis first does not support regulation requiring a 20 or 40 percent increase in fuel economy by the mid-1990's or 2001.

Second, the maximum technology scenario is risky and not cost effective to consumers. And third, does not address the effects of new safety and emissions standards. Nonetheless, S. 279 contains the original 20 percent increase for 1996 and 40 percent for the year 2001.

S. 279 also states that passenger car fleet average fuel economy between 38 and 45 miles per gallon is possible using existing technologies, without change in vehicle size or performance. We disagree.

What if every manufacturer produced vehicles equal to the highest fuel economy entry in each size class? The fleet average result for 1990 would still fall far short of 38 miles per gallon. And the highest fuel economy vehicles in each class represent less than 5 percent of total U.S. sales. These vehicles in some way do not meet the needs of more than 95 percent of new car buyers.

The committee report on S. 1224 also cited a similar analysis by EPA. It said fleet average fuel economy in 1988 would have been 33.9 miles per gallon if all cars in each weight class were equal to the highest fuel economy entry in that class. Again, far short of the 38 to 45 miles per gallon cited in S. 279.

And the committee report also cited a survey of automotive suppliers, but none ever testified at a public hearing. The subcommittee should hear their views directly. Many steel, rubber, and other supplier views that I have heard are opposed to S. 279. S. 279, in fact, requires a new car fleet average fuel economy increase of about 12 miles per gallon during the next 10 years. That is what 40 percent means. This compares to 4 miles per gallon achieved during the last decade, and about 12 miles per gallon in total during the last 15-year period beginning in 1975, when the act went in place.

The economic consequences of increasing fleet average fuel economy by 12 miles per gallon, again, could be severe. And the safety consequences of reducing vehicle weight by 1,000 pounds, again, remains a concern. I raise these points because at the moment no one has the facts to support legislation of this

importance. And nobody has analyzed the financial capability of various manufacturers to support the sustained increase in fuel economy proposed in S. 279.

We believe this hearing will highlight the acute lack of reliable information available to Congress about the CAFE issue. The divergence of opinions already voiced today will underscore this point. The committee should accept neither the views of professional political advocates, nor those of individual manufacturers. In fact, both groups have a vested interest in the outcome of this legislation. It makes sense to get all the facts before setting in motion legislation that could potentially harm a major industry.

Toward this end, the Department of Transportation recently began a comprehensive study with the National Academy of Sciences. It will provide factual material directly related to this legislation. The study will determine the maximum feasible fuel economy potential, considering technological opportunity, economic practicability, and the effect of new vehicle safety and emissions requirements. Initial results will be available by the end of June 1991.

We urge the subcommittee to review the DOT and NAS conclusions before acting on S. 279. We believe this course of action is prudent and in the national interest. And we hope you will agree. Thank you.

Mr. BRYAN. Thank you very much, Mr. Boltz.

We will next hear from Mr. Jerry Benefield. Mr. Benefield.

STATEMENT OF JERRY BENEFIELD, PRESIDENT AND CHIEF EXECUTIVE OFFICER, NISSAN MOTOR MANUFACTURING CORP., U.S.A.

Mr. BENEFIELD. Thank you, Mr. Chairman. With your permission I will summarize our statement and submit it for the record.

I am Jerry Benefield, President and CEO of Nissan Motor Manufacturing Corporation, USA, of Tennessee. I am testifying on behalf of Nissan North American, Inc., a wholly owned subsidiary of Nissan Motor Company, Limited of Japan. Nissan is the world's fourth largest producer of motor vehicles, and Nissan North America is rapidly becoming a fully integrated U.S. manufacturer.

Mr. Chairman, I suspect today that we can all appreciate what Yogi Berra must have been feeling when he once described something as "deja vu all over again." S. 279 is virtually identical to S. 1224 of the last Congress. And I would be surprised to hear testimony much different today than when you last convened hearings on CAFE in 1989. We certainly remain strongly opposed to the bill.

There is one very big difference between then and now, of course. Today we are at war in the Persian Gulf. The President has made clear that we are not waging war over oil. But we cannot escape the reality that our dependence upon imported oil, especially from so volatile a region, creates unacceptable risks for our country. We all have a responsibility to work to change that. At the same time we have learned over the past decade that there is no reason to think a more fuel efficient vehicle fleet will reduce our dependence upon imported oil. Our fuel efficiency and our dependence on oil imports have been growing in parallel.

A more fuel-efficient motor vehicle fleet should play an important role in a comprehensive national energy policy. Conservation makes undeniably good sense from both energy conservation and environmental viewpoints. Nissan supports the goal of improving the fuel efficiency of the Nation's automotive fleet. It is also undeniable, however, that mandating a more fuel-efficient vehicle fleet, in isolation will not necessarily produce energy savings or lower emissions of carbon dioxide. It may just encourage more driving.

There are two basic issues before us today: how fuel efficient a motor vehicle fleet is feasible, and how we should get from here to there. I am going to focus our testimony on the second issue—how we get there—because of the two issues, it is by far the more important to Nissan.

Let me summarize the case against the approach of setting different standards for different manufacturers.

First, the approach is bad regulatory policy. It penalizes superior performance and rewards inferior performance. The way S. 279 works, Nissan could be fined for a CAFE of 36 miles per gallon in 1996 while another company could be rewarded with CAFE credits for achieving a CAFE of just 28. That makes no sense.

Second, the S. 279 approach is anti-competitive. Both the Office of Technology Assessment and the Department of Justice have made this case to you. An important factor explaining the CAFE performance of high mileage companies like Nissan is our utilization of advanced fuel-saving technology. Under the approach in the bill, companies with the lower CAFE could gain a market advantage because they could employ technologies which higher mileage companies have already used. Moreover, because they have lower standards, those companies would not have to compromise performance, size, and comfort as much as higher mileage companies.

Third, the approach is self-defeating. Because of its anti-competitive effects, S. 279 would cause a shift in demand from vehicles sold by high mileage companies to vehicles sold by low mileage companies. More vehicles that are subject to less stringent standards would be sold and fewer vehicles that are subject to more stringent standards would be sold. That means the fuel savings anticipated by S. 279 would not materialize.

What is true for cars under the S. 279 approach is doubly true for trucks, because their work performing functions results in limited improvement potential.

S. 279 cannot be fixed. Lowering the standards and shifting the base year to 1990, as Senator Johnston did in S. 341, would lessen the anti-competitive effects of S. 279 but would not change the fact that the bill's approach is fundamentally and, I am afraid, fatally flawed.

There are ways to regulate automotive fuel economy that would produce real energy savings, require all manufacturers to develop and use advanced technologies, avoid anti-competitive effects, and still permit manufacturers to meet consumer needs and comply with competing regulatory demands. Analysts at OTA and in the administration have suggested an approach which sets a standard for each market segment a manufacturer operates in.

The concept needs refinements and we are fully prepared to cooperate with the subcommittee toward that end. We propose that work proceed along the following principles: seven traditional market segment classes of cars and six classes of light trucks would be established; an average fuel economy baseline would be computed for each class using the data from the most recent complete year, and standards would be set by applying the same improvement task to each class; finally, credits could be earned and transferred among market segments and manufacturers.

To relieve concerns that this approach could result in unrestricted sales of larger vehicles, the approach could be combined with a floor standard and/or market-based incentives to stimulate demand for the more fuel-efficient vehicles.

To summarize our position: Nissan is committed to producing fuel-efficient vehicles and supports the objective of a more fuel-efficient automotive fleet. We are strongly opposed to the uniform percentage improvement approach embodied

in S. 279 because of its anti-competitive effects. We will support and cooperate with any government effort to establish standards that would avoid anti-competitive effects.

Thank you for the opportunity of allowing me to testify.

[The statement follows:]

STATEMENT OF NISSAN NORTH AMERICA INC.

Nissan in the United States Nissan North America, Inc. is a wholly-owned subsidiary of Nissan Motor Company, Ltd of Japan, the world's fourth largest producer of motor vehicles. We are a company well on its way to becoming a fully integrated U.S manufacturer.

Ten years ago Nissan had no capacity to build vehicles in the United States. Today we have the capacity to manufacture 250,000 cars and trucks in Tennessee. Next year, when we complete an expansion of our Tennessee facilities, our production capacity will grow to 450,000 vehicles per year. We also just announced plans to construct an engine and major component facility that will come on line in 1996. By then, our investment will exceed $1.7 billion, and we will employ nearly 7,000 people in our manufacturing operations.

Our Carson, California sales and marketing arm employs 2,400 people in 13 facilities across the United States. Another eight Nissan-owned companies in the United States employ an additional 1,300 people. One thousand two hundred Nissan dealers throughout the country employ over 47,000 more.

Our ability to design and engineer products in the United States is growing right along with our manufacturing operations. We are building a major engineering center in Michigan that will employ more than 500 people. We have a state-of-the-art design studio in California And we operate testing and evaluation facilities in Arizona.

Our engineers and designers played a major role in developing the Sentra model we now build in Tennessee as well as the new vehicle we will begin to build next year. They are playing an even bigger role in designing the van we are developing and jointly producing with Ford next year at a Ford plant in Avon Lake, Ohio. As the capabilities of our engineers and designers grow, their role also will grow in developing product and technology not only for the U.S. market but also for Nissan around the world.

"Globalization" and "localization" express the two basic ideas that drive Nissan's business strategy. The first idea is that to succeed in an intensely competitive global marketplace, Nissan must develop world-class design and engineering capabilities in each of the three major centers of the world automotive industry - - the United States, Japan, and Europe - - and it must integrate that talent into a truly global production system. The second idea is that for Nissan and Nissan products to win acceptance in major markets, Nissan must build its products where it sells them. And in building its products it must operate as a genuine "corporate citizen" of its host country.

Nissan's Commitment to Improving Fuel Economy Nissan's objective is to build high quality, fuel efficient vehicles that offer consumers an excellent value for their automotive dollar.

Fuel efficiency always has been and always will be a high priority in the design of our products. Nissan has exceeded CAFE standards every year for both our car and light truck fleets. We have never sought to reduce or repeal the standards. And we have never used any of the CAFE credits we have earned by exceeding the standards.

Nissan is making every effort to improve fuel economy while meeting the other, sometimes conflicting, demands of our customers. An examination of the individual models in Nissan's lineup shows that their fuel economy has remained virtually the same or improved at the same time our CAFE fell. (See Attachment 1.)[1] Moreover, most of our models already have a high utitzation rate of the best available technologies for improving fuel economy. (See Attachment 2.) Looking to the future, we will be stepping up our utilization of existing fuel saving technologies (such as roller rocker arms for OHC engines and variable valve timing control) and accelerating our development of new technologies for post-2000 vehicles. (See Attachment 3.) And we are putting pressure on our suppliers to assist us by, among other things, reducing the weight of parts.

It is true that our corporate average fuel economy, while stili exceeding the standard, has declined in recent years. Several factors explain this: Nissan's model mix has changed in response to consumer demand. For example, before its complete redesign this fall, our most fuel efficient model, the Sentra, was nearing the end of its model life, and its sales declined. Also, in 1990, Nissan continued its evolution to a full line manufacturer when we introduced our mid-size luxury line, Infinity. The combination of these and other factors hurt our CAFE. That situation is turning around this year: our 1991 CAFE is projected to exceed our 1990 CAFE.

CAFE AND ENERGY POLICY

Nissan supports the goal of improving the fuel efficiency of the nation's automotive fleet Conservation makes undeniably good sense from both environmental and energy security perspectives. We cannot escape the reality that our dependence upon imported oil, particularly from so volatile

[1] The attachments were not reproducible.

an area of the world as the Middle East, creates unacceptably large vulnerabilities for us. That must change.

There are also other realities we cannot escape. The market is surely one Our experience confirms the relationship between fuel prices and consumer demand. American consumers bought higher mpg-rated cars in the late 1970s and early 1980s when gasoline prices were higher. Absent a rise in gasoline prices, more efficient cars may simply encourage people to drive more frustrating the energy conservation goals of CAFE which is exactly what has happened in recent years.

What is needed is both a more fuel efficient vehicle fleet and changes in consumer behavior. Simply mandating more fuel efficient vehicles would pI, t manufacturers in conflict with their customers, slow down the turn-over of the fleet, and frustrate our energy conservation objectives.

New standards make sense as part of a comprehensive national energy policy that takes into account the realities of the market. Also, any new standards should: actually reduce energy consumption and carbon dioxide emissions; be technologically feasible and cost-effective, and provide manufacturers adequate lead time to comply; promote the development and adoption of fuel efficient technologies and weight reduction by all manufacturers; avoid anti-competitive effects; and allow manufacturers sufficient flexibility to meet consumer needs and comply with competing regulatory requirements.

S. 279 does not meet these criteria.

S. 279 EMBODIES A FLAWED APPROACH TO FUEL ECONOMY REGULATION

The most serious flaw in S. 279 is the way it would regulate fuel economy in the future, by setting different standards for each manufacturer. This approach embodies a fundamentally flawed regulatory philosophy. From that basic error flows the undesirable consequences of S. 279: its anti-competitive effects and its failure to achieve the very energy savings it seeks. We urge the Subcommittee to consider an alternative approach based on different standards for each market segment rather than different standards for each manufacturer.

1. Setting Different Standards for Each manufacturer is a Fundamentally Flawed Approach to Government Regulation.

Setting different standards for each manufacturer would be a radical departure from every other federal regulatory program. Such an approach would "punish" superior performance by assigning ever-more stringent standards to superior performing companies, even when that performance reflects a more aggressive use of advanced technologies. And it would "reward" lower performance by setting easier standards for those compares.

The flaw in such a regulatory philosophy becomes apparent when its practical consequences are considered in the context of S. 279. To illustrate, Nissan's CAFE in 1988 was 30.8 mpg; therefore, S. 279 would require Nissan to achieve a CAFE of 37 mpg in 1996. By contrast, a manufacturer with a 1988 CAFE of below 23 mpg would be required to achieve only the "floor" standard of 27.5 mpg. The way S. 279 works, the government would penalize Nissan (that is, assess Nissan fines) if its CAFE were 36 mpg in 1996, while the government would reward (that is, give CAFE credits to) the other manufacturer for achieving a fuel economy of only 28 mpg.

2. Setting Different Standards for Each Manufacturer Will Have Significant Anti-Competitive Consequences, Particularly to Manufacturers With a High Rate of Use of Advanced Technology.

We know of no clearer description of the anti-competitive effects of the approach taken by S. 279 than the submission of the Office of Technology Assessment (OAT) to this Committee for the record of its hearing on S. 1224 in the 101st Congress (See. S. Hrg. 101-347), so we quote it: ...the proposed structure may be vulnerable to claims that it is inequitable and unfair. The structure does not account for the fact that at least a portion of the current differences in companies' CAFEs are due to ... the companies' different efforts at moving advanced technology into their fleets. Our analysis of the fuel economy characteristics of various company fleets indicates that some companies have fleet fuel economies that are well above the industry average even when the effects of fleet size distribution are accounted for. Thus, this type of standard penalizes manufacturers who have tried the hardest to increase their fleet fuel efficiency in the past. They now have the most difficult technological challenge, because they have already "used up" a larger portion of the technological headroom available to them from off-the-shelf technology. Companies that have hesitated to use the best available technologies . ... are instead rewarded by being presented with the lowest efficiency target. Furthermore, there is the possibility that consumers may not place a high value on the increased level of the fuel efficiency, and thus may tend to prefer lower efficiency vehicles from the Favored" companies, because their price tags don't include the costs of the most advanced technologies. Also, it is possible that companies that wind up with the lowest efficiency targets could use the leeway these lowered targets afford them to increase vehicle performance to levels that companies with higher efficiency targets may not be able to match (because higher performance reduces fuel efficiency). If either of the latter two outcomes occur, we have not only rewarded the lower efficiency automakers with an easier target, but have given them a market advantage as well.

The Department of Justice provided this Subcommittee (letter of January 26, 1990) with a somewhat different but equally valid perspective on the anti-competitive consequences of S. 279: manufacturers with high average fuel economies will be impeded in entering U. S. markets for larger cars because such entry"—even ff they produce more efficient larger cars than are now available—

could prevent them from meeting the new standards. Thus competition would suffer and the fuel efficiency of a whole category of vehicles could be kept artificially low.

The ultimate implications of the analyses of OAT and the Justice Department are that higher mileage companies would be forced to resort to expensive, unproven technologies, and to downsize their fleets to market segments which have limited demand. On the other hand, the lower mileage competitors would be able to offer a broader range of vehicles to consumers simply by incorporating currently available technology to meet CAFE standards. A consumer who owned an entry-level Nissan and who wanted to buy a mid-size Nissan to accommodate a growing family might not be able to find one. Congress should avoid establishing an approach to regulating CAFE which has the potential to restrict consumer choice so significantly.

3. Setting Different Standards for Different Companies Will Not Achieve Intended Fuel Saving.

S. 279 can achieve its overall fleet fuel economy goal only if all higher mileage manufacturers retain their 1988 market share. S. 279 itself makes that very condition impossible, however. As a result, the fuel economy gains the bill seeks will not be realized.

The reasons why S. 279 is self-defeating are clear in the logic of OAT's submission to this Subcommittee, quoted above. Giving a market advantage to lower mileage manufacturers would enable them to gain market share at the expense of higher mileage manufacturers. Lower mileage manufacturers could increase their utilization rates of fuel saving technologies already in use by higher mileage manufacturers, enabling them to meet the lower standards that apply to them without having to resort to downsizing and reducing vehicle performance. Higher fuel efficiency manufacturers, faced with more stringent standards, would be forced to embrace expensive, unproven technologies, to downsize, and to reduce performance.

In a very competitive marketplace, sales of vehicles that cost more, have reduced performance, and fall to meet consumer needs would lose out. More vehicles that are subject to less stringent standards would be sold and fewer vehicles subject to more stringent standards will be sold. The result would be that the fuel savings anticipated by S. 279 would not materialize.

4. Setting Different Standards for Each Manufacturers Will Have Especially Severe Consequences in the Light Truck Market.

The fact that trucks carry payloads imposes certain design limitations. These limitations mean that the potential to improve the fuel efficiency of trucks is less than that for cars. For example, front wheel drive is an effective fuel saving technique for cars that is not suitable for trucks because a truck's drive wheels should be situated under its payload.

Two types of light-duty trucks are offered for sale today, compact and full- size models. Higher mileage manufacturers offer only compact models; lower mileage manufacturers sell both types. Nissan sells only compact light trucks and currently has the highest light truck CAFE of any major manufacturer in the U. S. market.

To meet the proposed standards, Nissan and other higher mileage manufacturers would be required to downsize their trucks. This would put our trucks into a market segment that now does not exist. Such trucks would have very limited load-carrying capabilities and would meet the needs of very few consumers. Lower mileage manufacturers, on the other hand, could apply fuel saving technologies already in use by higher mileage manufacturers and move into the compact market segment that higher mileage companies would be forced to abandon. As a result, S. 279 could virtually eliminate the higher mileage manufacturers from the light truck market. Whatever fuel savings were achieved would be smaller than anticipated because the higher mileage manufacturers might be unable to participate in the marketplace. Consumer choice could be restricted severely.

THE TECHNICAL FOUNDATION OF S. 279 IS FAULTY

We are aware of no credible study supporting the feasibility of the proposed standards for all manufacturers and for all categories of vehicles. Proponents of S. 279 cite certain studies as supporting the feasibility of the targets but they ignore limitations of the studies which the authors of the studies themselves readily acknowledge.

Economic and consumer acceptability clearly were not considered in the analyses. [2] The studies focus only on the capabilities of U.S.-based manufacturers and do not consider the extent to which foreign-based manufacturers have already adopted advanced fuel saving technologies. [3] The studies found there is substantially lower potential for improving fuel economy for light trucks than for cars. [4] Since publication, the authors have reported errors in methodology which caused them to overstate their fuel economy projections. [5]

There is, in short, no sound technical foundation for the standards in S. 979. Any new CAFE program must have a sound technical foundation. Senator Johnston recognized this problem in lils bill, S. 341, which directs the Administration to take technological feasibility and economic practicability into account when setting specific CAFE standards. Nissan Urges this Subcommittee to do the same.

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[2] See Attachment 5, letter from EEA to Senator Carl Levin of June 4, 1990.

[3] See "Domestic Manufacturers' Fuel Economy Capability To 2001 - An Update," EEA, Prepared for Martin Marietta Energy Systems, Oak Ridge, Tennessee, October, 1989.

[4] Id., Chapters 4 and S.

[5] See Attachment S.

The Department of Transportation has commissioned the National Academy of Sciences (NAS) to undertake a study of the potential for increasing automotive fuel economy. We hope the authors of the NAS study will avoid the pitfalls of the earlier analyses referenced above. The NAS effort is particularly noteworthy because it plans an approach that will avoid any anti- competitive effect. The NAS will focus on the potential for improving fuel economy by size-classes of vehicles rather than for individual manufacturers. As the Subcommittee will see, this is consistent with the regulatory approach Nissan advocates.

S. 279 CANNOT BE "FIXED."

Because S. 279 is inherently flawed, no tinkering can fix it. Substantially reducing the mandated percentage improvements might bring the targets within the realm of technological feasibility but would not eliminate the bill's discriminatory effect. Even with less extreme targets, lower mileage manufacturers would be able to pursue compliance strategies that would enable them to capture market share from higher mileage companies, since they have the less expensive option of diffusing technology we have already incorporated into our fleet, while we would be forced to adopt more expensive options. Selecting a different model year would somewhat lessen the bill's anticompetitive consequences but would not eliminate them. The choice of 1988 as the base year for S. 279 magnifies 4~he anti- competitive effects inherent in the uniform percentage approach by ignoring changes in the marketplace and shifts in manufacturer model mix that have occurred since then. A more appropriate base year, selected by Senator Johnston for S. 341, would be 1990. It is more appropriate because it better reflects current consumer preferences and manufacturers' present model lineups

S. 279 contains a provision (Section 516) that provides a means for manufacturers to obtain administrative relief from the standards the bill would require them to meet. However, the exact criteria to be applied are unclear. As a result, it is unlikely that a manufacturer could win administrative relief under the terms of the legislation.

ALTERNATIVE APPROACHES CAN ACHIEVE ENERGY SAVINGS AND AVOID THE PITFALLS OF THE DIFFERENTIAL STANDARDS APPROACH.

The Subcommittee should seriously consider alternative approaches. Analysts in the Administration and the Office of Technology Assessment have both pointed to a preferable alternative: standards based on vehicle size or market segment classes that would treat manufacturers in a like manner regardless of the number of lines they offer or the product mix of their fleets.

This concept can meet each of the criteria we have outlined as constituting a responsible approach to regulating automotive fuel efficiency. The concept needs further refinement, and Nissan is prepared to cooperate fully with the Subcommittee to that end. We propose that work proceed along the following principles:

Standards would be set for the seven traditional market segment classes of passenger cars and six classes of non-passenger vehicles (light trucks, vans, and sport utility vehicles) (See Attachment 6.) Standards would be set using data from the most recent year in which complete data is available. The average fuel economy for each market segment would be determined for the base year.

Standards would be set by applying the same improvement task to each class.

Credits for exceeding the standards in any one market segment could be earned by a manufacturer and transferred to another market segment as well as to another manufacturer. This would give manufacturers flexibility to meet the needs of consumers while the fleet as a whole would still meet the overall fuel efficiency target.

The advantage of this approach is that vehicles would compete head- to-head in classes where the standards are directly related to the past performance in that class. There would be no discrimination among manufacturers and therefore no anti-competitive effects.

We acknowledge that concerns have been raised that the market segment approach would permit unrestricted growth in the sales of larger vehicles, and thus cannot guarantee that energy savings would result. We believe these concerns are unwarranted but we nevertheless believe that measures can be adopted to compliment the market segment approach to ensure the intended savings would be realized.

We believe the concerns are unwarranted privy because of evidence that consumer demand for vehicle size is, on average, relatively constant. Data from the Oak Ridge National Laboratory shows that average interior volume of the nation 's vehicle fleet has remained quite stable—with a range of plus-or-anus two percent—from 1977 to 1990. (See Attachment 7.) Considering the variation in circumstances over that period—from no fuel economy standards to the current standards, through rising and falling gasoline prices, through oil embargoes, through economic downturns and upturns—this stability is remarkable. The data suggests consumers will continue to demand a mix of all vehicle sizes, and that the marketplace will assure that such a mix continues to be supplied

Even so, market segment standards could be combined with a "floor" standard and/or with market-based incentives to stimulate consumer demand for fuel-efficient vehicles, thus employing both a "carrot and stick" approach. A credit scheme could also be devised to ensure the program works.

To summarize: Nissan is committed to the production of fuel efficient vehicles; and Nissan will support any governmental effort to establish standards that avoid anti-competitive effects, promote

the development and adoption of fuel-saving technologies by all manufacturers, and permit manufacturers to continue to meet consumers' needs and other regulatory requirements while achieving energy savings.

Mr. BRYAN. Thank you very much, Mr. Benefield. We will next hear from Mr. Elliott.

STATEMENT OF THOMAS G. ELLIOTT, EXECUTIVE VICE PRESIDENT, AUTO OPERATIONS, AMERICAN HONDA MOTOR CORP., TORRANCE, CA

Mr. ELLIOTT. Good morning, I am Tom Elliott, Executive Vice President of America Honda Motor Company. Let me say at the outset that we support the goals of improving U.S. energy security and reducing the potential global warming problem.

Honda supports the development of a comprehensive, national energy plan and believes that any additional vehicle fuel efficiency requirements should be considered only as one part of an overall strategy. Honda has been and will continue to be leader in fuel efficiency. Honda's 1991 CRX-HF is the highest-rated four-cylinder car sold in the U.S.

We have successfully demonstrated to the U.S. consumer that compact cars need not be dull but can be attractive with good fuel economy, comfort, and performance. And in fact in 1989 and 1990, the Honda Accord was the number one selling car in the U.S. And last year over two-thirds of those were made in Ohio.

Some have said the fuel economy levels called for in S. 279 can be achieved by this simple application of known technology to existing vehicles. However, most of these technologies has already been incorporated into Honda's vehicle fleet during the past 6 years. Since we have already used many of the technologies available to improve fuel economy, we believe that 20 and 40 percent increases required in S. 279 are unachievable with our current size product line up.

It is our estimate that a 4 percent improvement in CAFE is all that is achievable in a short term. Any increase greater than that will require Honda to down size those models with the highest sales volume, while a 20 percent increase, the starting point of S. 279, will require extensive product line repackaging, weight reduction, some model elimination, and performance degradation across the board.

We do not believe consumers are ready to accept such a big change in vehicle size and perfonnance. As of yet, there is no new technology known to Honda to achieve a 40 percent increase. S. 279 will require Honda to have fleet average of 38.4 miles per gallon in 1996 and 44.8 miles per gallon in 2001. We currently make some models that obtain these levels of fuel efficiency, but they account for less than one percent of our 1990 sales.

Our Civic line of subcompact vehicles will have a full model change with the 1992 model, and its fuel economy will increase. The CRX-HF will be replaced with a new car, a Civic hatchback we call the VX model whose highway fuel economy targets are 65 miles per gallon highway and 50 miles per gallon city. Despite these high targets, we do not project a large sales volume for this particular car, based on our current experience with the Civic CRX-HF.

We would like to stress that fuel economy is but one part of the car design formula. A manufacturer must also meet consumer demands for other vehicle features, such as comfort and convenience, size, safety, styling, acceptable performance, and an ability to meet the requirements of the new clean air law. And manufacturers must do all of this at a reason cost to new car purchasers.

The new side impact standards and Honda's announced commitment to install both driver and passenger airbags in all U.S. models in model year 1994 will both increase weight, making fuel economy improvements even more difficult.

S. 279 breaks a longstanding history of regulating an industry as a whole by setting different standards for different manufacturers based on their past performance. In fact, it punishes those companies who exceeded the standard in the past by setting a dramatically higher requirement for them.

S. 279 has the effect of locking certain manufacturers into specific market segments and restricts their ability to compete in new and changing market categories. Such a restriction of competition is harmful to the consumer, because limited competition guarantees higher vehicle prices and lower fuel economy.

We do not believe that regulatory policies by themselves are enough to ensure a major consumer shift to more fuel efficient vehicles. Market incentives such as fuel taxes, purchase incentives, scrappage programs, and tax credits should also be considered.

We are not here to oppose an increase in CAFE. While we strongly believe that all manufacturers should meet the same standard, we recognize that the current CAFE program is not sensitive to model mix and consumer demand. For this reason, we believe that a market segment approach should be considered.

In conclusion, we believe that individual standards for manufacturers based on past performance are anti-competitive and unfair. An alternative should be considered. The committee should wait for the NAS study to complete their assessment of what is technologically and economically feasible. And we should evaluate the vehicle fuel economy as part of an overall national energy plan.

Honda is committed to improving vehicle fuel economy. We look forward to working with you and your staff as you consider this further.

Thank you very much.

[The statement follows:]

STATEMENT OF HONDA NORTH AMERICA, INC.

Good morning. I am Tom Elliott, Executive Vice President, Automobile Operations, American Honda Motor Co. We are pleased to present our views on S. 279, Motor Vehicle Fuel Efficiency Act. Let me say at the outset that we support the goals of improving U.S. energy security and reducing the potential global warming problem. We commend Senator Bryan for having brought these important issues forward for Congressional debate. Honda supports the development of a comprehensive National Energy Plan and believes that any additional vehicle fuel efficiency requirements should be considered only as one part of an overall strategy.

Honda has been and will continue to be a leader in fuel efficiency. We have consistently placed models in the top ten most fuel-efficient. Honda's 1991 CEX-HF is the highest rated 4-cylinder car sold in the U.S. at 49 mpg (city) and 52 mpg (highway). In every year since the standards took effect, we have achieved a CAFE level which exceeds the standards by a wide margin. Honda has never had to rely on the use of credits earned in previous years. We have successfully demonstrated to the U.S. consumer that compact cars need not be dull, but can be attractive with good fuel economy, comfort, and performance. And in fact, 1989, and 1990 the Honda Accord was the number 1 selling car in the U.S. and last year over 2/3 of those where made in Ohio.

Some have said that the fuel economy levels called for in S. 279 can be achieved by the simple application of known technology to existing vehicles. However, most of these technologies have already been incorporated into Honda's vehicle fleet during the past 6 years.

Since we have already used many of the technologies available to improve fuel economy, we believe the 20 and 40 percent increases required in S. 279 are unachievable with our current sized product line. It is our estimate that a 4% improvement in CAFE is all that is achievable in the short term by the refinement and optimization of existing technologies. Any increase greater than that will require us to downsize those models with the highest sales volume, while a 20% increase, the starting point of S. 279, will require extensive product line repackaging, weight reduction and performance degradation across the board. We do not believe consumers are ready to accept such a big change in vehicle size and performance especially when accompanied by the price increases which are inevitable.

We are continuing research on reduced rolling resistance, improved aerodynamics, reduced weight through better structural design and new lightweight materials, and refinements to the engine and drivetrain. As of yet there is no new technology known to Honda to achieve a 40% increase.

S. 279 will require Honda to have a fleet average of 38.4 mpg in 1996 and 44.8 mpg in 2001 based on our 1988 CAFE of 32 mpg (compared to the government standard of 26 mpg). We currently make some models that obtain these levels of fuel efficiency but they accounted for less than 1 percent of our 1990 sales.

We are working to increase the fuel efficiency of all our vehicles but such radical increases as proposed in S. 279 would dramatically alter our product lineup.

Today, our Civic line of subcompact vehicles has a fuel economy range of between 28/32 mpg (city) to 33/37 mpg (highway). This line will have a full model change with the 1992 model and its fuel economy will increase. The Civic CEX HF will be replaced with a new car, the Civic Hatchback V, whose fuel economy targets are 65 mpg (highway) and 50 mpg (city).[1] Despite these high targets, we do not project a large sales volume for this particular car based on our current experience with the Civic CEX HF.

In considering the next full model change for our Accord model, we are balancing the demands of the consumer with the responsibility to improve fuel efficiency and other regulatory requirements. We would like to stress that fuel economy is but one part of the car design formula - - a manufacturer must also meet consumer demands for other vehicle features such as comfort and convenience, size, safety, styling, acceptable performance, and an ability to meet the requirements of the new clean air law. And manufacturers must do all this at a reasonable cost to new car purchasers.

Safety standards will have some impact on the effort for improved fuel economy. They pose a greater challenge for smaller cars. The new side impact standards and Honda's announced commitment to install both driver and passenger air bags in all U.S. models in Model Year 1994 will both increase weight, making fuel economy improvements even more difficult.

In order to accurately assess the technological capability of the industry to improve fuel economy, Honda fully supports the study now underway by the National Academy of Sciences (NAS) for the Department of Transportation. That study will address the technological as well as the economic constraints of higher fuel efficiency. We urge the Committee to consider waiting for the results of the NAS study, due out in June, before taking any action on S. 279.

S. 279 breaks a long standing history of regulating an industry as a whole by setting different standards for different manufacturers based on their past performance. In fact, it punishes those companies who exceeded the standard in the past by setting a dramatically higher requirement for them. This is a major shift from the uniform emissions and safety standards applicable to all manufacturers selling vehicles in the U.S.

By establishing dramatically higher fuel economy requirements for some companies, S. 279 has the effect of locking certain manufacturers into specific market segments and restricts their ability to compete in new and changing market categories. Such a restriction of competition is harmful to the consumer because limited competition guarantees higher vehicle prices. Since manufacturers with the highest standards may be restricted from participating in some classes, relatively fuel efficient models may be eliminated while similar but less efficient cars could still be sold by a manufacturer with a lower standard. It seems strange that under S. 279 a company whose CAFE standard is 38 mpg but achieves only 36 mpg is penalized, while a company whose CAFE standard is 28 mpg and achieves 29 mpg is rewarded. Which manufacturer is actually helping to reduce the consumption of gasoline?

We do not believe that regulatory policies by themselves are enough to assure a major consumer shift to more fuel efficient vehicles. Market incentives such as fuel taxes, purchase incentives, scrappage programs and tax credits should also be considered.

We are not here to oppose an increase in CAFE. While we strongly believe that all manufacturers should meet the same standard, we recognize that the current CAFE program is not sensitive to model mix and consumer demand. For this reason, we believe a market segment approach should be considered. Manufacturers would compete head to head in a specific market segment(s) and not on an aggregated fleet basis. Minimum standards, penalties, and credits can be established to ensure that the energy conservation goal will not be circumvented by a shift to larger, less efficient vehicles, as some have suggested. The marketplace would function within vehicle classes and consumer choice would not be limited by a reduction of competition.

In conclusion we believe: (1) Individual standards for manufacturers based on past performance are anticompetitive and unfair. We prefer a single standard for all manufacturers. An alternative might be a market segmentation approach that incorporates minimum standards and penalty provisions. Further, any program should consider the use of consumer incentives to stimulate demand for fuel efficient vehicles.

(2) The Committee should wait for the NAS to complete their assessment of what is technologically and economically feasible.

(3) Evaluate vehicle fuel economy as part of an overall National Energy Plan. Any U.S. energy policy should impact all sectors of the economy and go beyond CAFE.

Honda is committed to improving vehicle fuel economy. We look forward to working with you and your staff as you consider this further. Thank you very much.

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[1] Targets for Civic V are unadjusted.

Senator BRYAN. Thank you very much, Mr. Elliott.

And batting cleanup is Mr. Pestillo. Am I pronouncing that last name correctly, sir?

Mr. PESTILLO. Yes, sir.

Senator BRYAN. Welcome to the panel.

STATEMENT OF PETER J. PESTILLO, VICE PRESIDENT, CORPORATE RELATIONS AND DIVERSIFIED BUSINESSES, FORD MOTOR CORP., DEARBORN, MI

Mr. PESTILLO. Senator Bryan, thank you.

Much has been going on in the auto industry in the 15 years since Congress first considered CAFE legislation. In fact, in that time we have really undergone a revolution. We had to make the American product world-class competitive, because foreign companies had improved theirs and tripled their market share over that time. We at Ford improved our quality more than 70 percent, and our productivity almost doubled. Over that time, as well, our market share has improved more than four points. So we have come to produce world class products.

At the same time we have stepped up to our societal responsibilities. Emissions from our cars have been reduced dramatically, as much as 96 percent for some pre-control vehicles. Safety improvements have helped reduce the highway fatality rates to the lowest point in our history, and places the United States among the very best in the world.

We have, as well, dramatically improved the fuel economy of our cars. The largest car we build today, the Lincoln Town Car, has better fuel economy than the smallest car we built in 197S.

These improvements did not come easily, because we make one of the most complicated consumer products, where about 10,000 parts have to come together to go forward at the turn of a key under the best and worst of atmospheric conditions.

But we do accept our obligation to continue to make improvements for our customers. We expect over the next few years to hire several hundred engineers and invest more than $2 billion to meet the 40 or 50 new automotive regulations emerging out of the Clean Air Act.

By the mid-1990's, we plan as well to have full front airbags on all of our cars and almost 50 percent of our trucks. We will have, as well, anti-lock brakes on almost all cars and most of our trucks.

We plan to produce substantial number of flexible fuel vehicles as well in the mid-1990's. And we have joined with GM and Chrysler in a battery consortium that may make electrical vehicles commercially viable.

We can improve the fuel economy of our vehicles, and we are doing so across the board. For example, our just- introduced Crown Victoria and Grand Marquis incorporate lower displacement engines, electronically-controlled transmissions that improve shifting and substantially improved the aerodynamics. The result is a 1- to 2-mile-per-gallon fuel economy improvement on these cars versus their predecessors. And these are full-size cars.

In fact, as we redesign each car and truck model in our cycle, we will be applying many of these technologies such as multi-valve engines, lightweight materials, and the like. We are actively pursuing research on things we have not introduced yet such as two-stroke engines, continuously variable transmissions, lean-burn engines, and advanced diesels and the like.

But these technologies can yield only limited CAFE benefits and they will be far short of those required by S. 279 because the weight of a vehicle largely dictates fuel economy, and therefore, reducing size and weight is the only way to achieve significant additional fuel economy improvements. That is a law of physics, not policy.

In considering fuel economy regulation, we must all recognize that there are legitimate competing pressures.

First consumer choice. This country is unique in that there are about 3,000 miles between our borders, a well-developed interstate highway system, and a history of cheap gasoline. It is not surprising that American consumers seek relatively larger vehicles as the only practical, efficient way to travel large distances with large families.

Second, safety. All other things being equal, larger, heavier cars are safer cars. In a vehicle crash, larger vehicles have more structure to absorb the energy. This is another law of physics that is not lost on our customers. Our studies show that buyers of our larger cars, whose median age is 63, rank safety high as a purchase consideration.

Third, other Government regulations are at work against fuel economy. Meeting new emissions standards for the 1990's requires that spark advance in air fuel mixtures be set at levels that are opposite those that would be required to maximize fuel efficiency. Emissions actions are expected to reduce fuel economy by about a half a mile a gallon. Other regulations for safety will add weight and subtract an additional half mile per gallon, so we must undertake substantial fuel economy improvements just to stay even. We need to get a mile a gallon better just to get back to where we have been.

Fourth, cost. While it may be technically possible to produce a lightweight car made of exotic materials as titanium and graphite composites, it is likely to raise the cost of a car beyond the means of most Americans. We at Ford understand aerospace technology. We cannot provide these materials at prices our customers can afford or are willing to pay. So fuel economy regulations in our view need to strike a balance among these factors. They should be based on the best available scientific, economic, and technical information.

Too often, auto regulation has been the result of political compromise, not sound technical judgment. To date there is no such information. The studies in which S. 279 is based are hypothetical studies of an assortment of technologies with no substantiation of improvement potential and no acknowledgement of the effect of other regulations or the impact on vehicle affordability. Even these studies' authors later reduced the potential near-term gains.

Much has been said the NAS study that will estimate fuel economy levels that can practicably be achieved for new cars and trucks, and it has been ordered to take into account all of the considerations raised here today.

We do so in probably the most depressed economic conditions we have known. At Ford, more than a third of our workers are on temporary or indefinite layoff. And sales orders and cars built are running at levels lower than we have seen since 1982.

While this is going on, we have still got the obligation to maintain record levels of spending to meet new regulations and competitive pressures. Ford will spend more than $26 billion in the next 5 years, having spent $26 billion in the last S. The end result is the serious deterioration of our financial condition that the Senator mentioned earlier. This is going to affect the amount of money the manufacturers have available to invest and also how quickly we are able to improve the fuel economy of our vehicles.

We intend to be responsible. And we are continuing to improve the fuel economy of our fleet.

We urge the Congress to await the outcome of the NAS study before proceeding in this critical issue. Our purpose is not to delay consideration of auto fuel efficiency, but to do so in the light of more informed data, to provide a basis for developing what will be a significant portion of our energy policy. Then we would be pleased to work with the Congress, once the study is complete and within the framework of this congressional session.

Thank you, Senator.

[The charts referred to follow:]

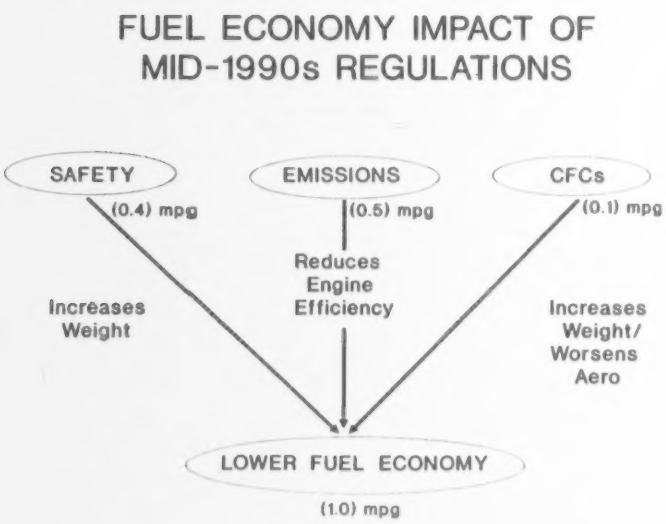


CHART 11

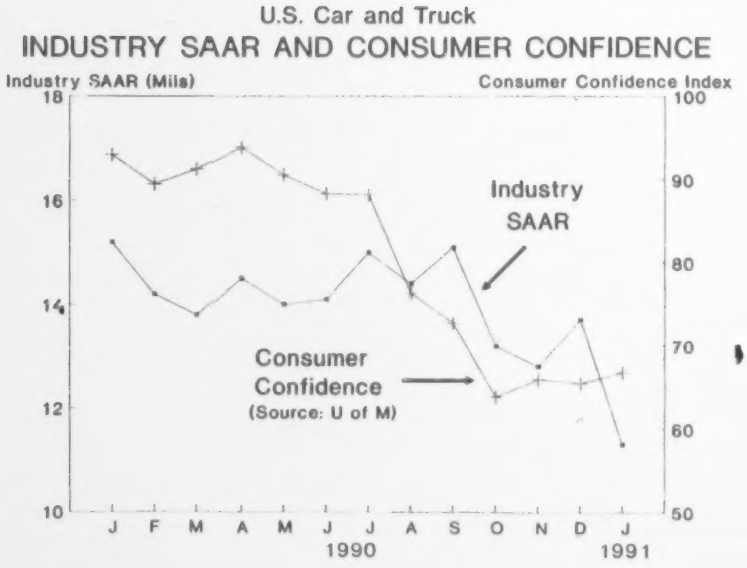
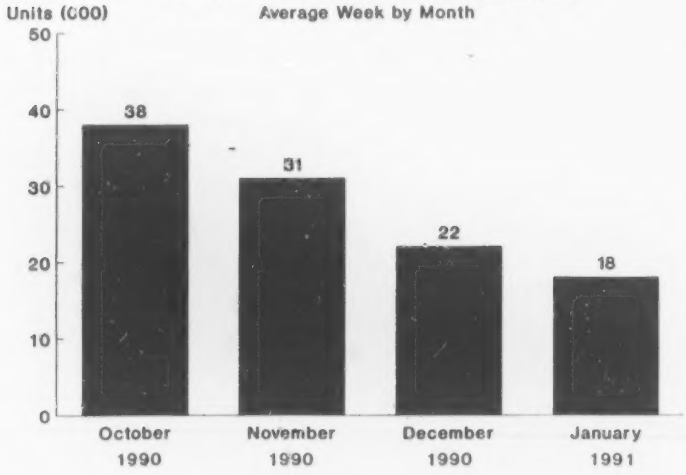


CHART III

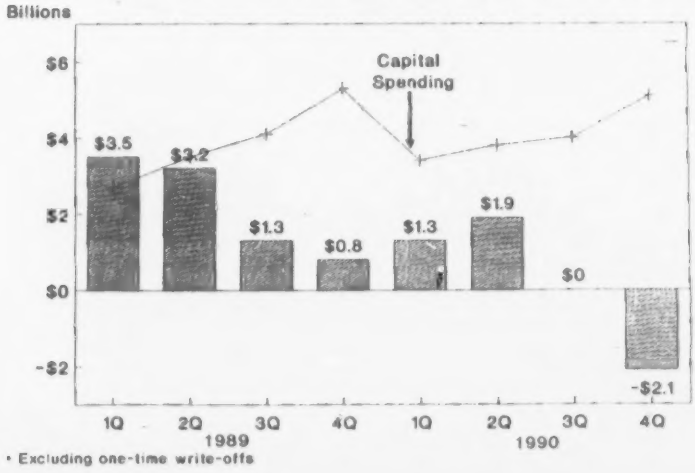
Ford Motor Company

DEALER RETAIL ORDERS



Ford, General Motors and Chrysler

NET INCOME * AND CAPITAL SPENDING



Senator BRYAN. Thank you very much, Mr. Pestillo.

Senator Gore has a commitment which will take him from the subcommittee momentarily and has asked to be able to go first and, with no objection, we will do so.

Senator GORE. Thank you, Mr. Chairman. I appreciate your courtesy and that of Senator Gordon. I do have to return to the Armed Services Committee for the hearing that I mentioned earlier, but I wanted to ask just a couple of questions of this panel. And I want to express my regrets that I will not be able to hear the testimony of panel 3, although I have read the statements and I notice that Jay Hair is speaking not only in behalf of his organization, but virtually the entire

environmental community in that statement. And I also welcome Dick Warden, a long-time friend, Mark Ledbetter and Deborah Bleviss.

Briefly on this panel—Mr. Eads I mentioned earlier how supportive all Tennesseeans are of the decision by General Motors to invest in the Saturn facility in Tennessee. What does the Saturn get in gas mileage?

Mr. EADS. There are two models, a compact and a subcompact version. The compact version with the unadjusted EPA rating is 34 miles per gallon. The subcompact version is 31.

Senator GORE. So we would already meet these standards that of course are not applied to the vehicle but to the fleet?

Mr. EADS. Well, let us be very careful with that. Remember the testimony that the gentleman from Honda gave. Just as Honda, we produce some cars now that way exceed the standards.

Senator GORE. I understand.

Mr. EADS. What you are proposing is not—what this legislation proposes is not that some of our cars meet the standard, but that the fleet average meet the standard and it turns out that because of the way those averages are computed, we would have to basically produce, as I said, a very high proportion of some——

Senator GORE. You would have to produce even more Saturns in Tennessee.

Mr. EADS. Well, we would have to produce them somewhere. We would have to sell them, too.

Senator GORE. That of course is the other half of the equation and witnesses have properly made that point, another reason for the earlier discussion that we had on the market and how do we look at the market. But it is—if that part of the—if that half of the equation is adequately addressed, then the kind of cars that you are making in Tennessee and the kind of cars and trucks that you are making, Mr. Benefield, would be even more popular.

Let me say, Mr. Benefield, you and I disagree on this bill, but you and I agree that a better bill can be crafted than this bill. I believe that, given a choice between something imperfect and nothing, the overall problem is so large that something needs to be done.

I will work to improve this legislation. I want to call to the attention of the subcommittee an important feature of Mr. Benefield's statement this morning which may have passed by almost unnoticed. He said toward the end of his statement that Nissan will support any governmental effort to establish standards that avoids anticompetitive effects, promotes the development and adoption of fuel saving technologies by all manufacturers, and permits manufacturers to continue to meet consumer needs, et cetera.

This is a shift, is it not, Mr. Benefield, in your company's position?

Mr. BENEFIELD. It is not a shift, Senator, but it is a firm statement that we believe CAFE can be improved some, and we are willing to participate in that process to figure out how much of an improvement is feasible and what is the best way to achieve it. We will support new CAFE legislation that does not put us in a bad competitive position and that does not apply standards that are so stringent we cannot possibly achieve them.

Senator GORE. I want to say to my colleagues that in the dialogue I have had with automobile manufacturers on this question, I have said, look, the automobile problem is so enormous, if you are opposed to this legislation give us an alternative. Tell us what is a better way to do it. Some have not offered alternatives. Here we have an alternative offered, and I want to call attention to it because I think it is significant.

Earlier in the statement there is an outline of an approach which you recommend and an offer to work with the committee in exploring it. I will take you up

on that offer and explore it, because, as I said earlier, I think that CAFE legislation is necessary, and I will support CAFE legislation. I support this bill, but I believe that we can have a better bill.

I also believe, to return in my final comments to the statement that I made at the very outset, that we have to have an answer to Mr. Eads' statement about the marketplace, and that is why I think we have to have some macroeconomic policy to reflect the true cost of the choices made in the purchase of gasoline and in the purchase of cars and trucks.

So Mr. Chairman, thank you again for your courtesy in letting me get back to this Armed Services hearing.

Senator BRYAN. Thank you very much, Senator, for your participation in the hearing.

Let me see if we can develop a common data line here, if you will, for a moment.

Do each of you agree that improved fuel efficiency for automotive fleets is a desirable public policy? If you do not, please let me recognize you so that you can comment on that.

Mr. Eads, you may disagree with that.

Mr. EADS. I want to make sure I understand what you are asking us to agree to.

Senator BRYAN. That is fair, since this record will be a permanent memorial of these proceedings.

Mr. EADS. I was here listening to Steve Schneider. I have listened to Steve on many occasions. If I understand Steve correctly, the atmosphere does not care what label there is on a car. It does not care what label of fuel efficiency there is.

What affects greenhouse gas emissions is the amount of fuel that gets burned. Fuel efficiency is a tool to get there, and one of the main problems I had in my testimony and the main problem I have with CAFE is it focuses on a very flawed and imperfect way of improving fuel efficiency.

Senator BRYAN. Let me just see if I can get you to at least agree or disagree. Do you agree that improved fuel efficiency for automobiles is a desirable public policy, improved fuel efficiency meaning getting more miles per gallon no matter how you get there?

Mr. EADS. Again, if you say it is desirable, for example, because it will improve energy security, both myself and Mr. Benefield pointed out that higher CAFE will not improve energy security.

Senator BRYAN. I am not asking you that. I am not asking you to talk about CAFE. I am asking you public policy. The Congress of the United States has its responsibility to develop and formulate public policy, and I am asking you as a witness as a policy goal that it is desirable to improve fuel efficiency for automobiles. I do not care how you get there. If you disagree, obviously we want that as part of the record.

Mr. Eads, you still have the microphone.

Mr. EADS. I wanted to let others of my panel speak.

If it is not to achieve energy security and it does not help reduce global warming, I am hardpressed to see how it is a desirable policy.

Senator BRYAN. Mr. Eads, should the record reflect that with respect to General Motors, General Motors has no possession as to whether improved fuel efficiency for automobiles is a desirable public policy? I want to give you the opportunity to either make that a part of the record or reject it.

Mr. EADS. To repeat, my position is that if it does not improve energy security and if it does not improve environmental quality, then I see no reason for it.

Senator BRYAN. You see no reason for it?

Mr. EADS. If it does not do that.

Senator BRYAN. Mr. Olson, Mr. Benefield, Mr. Boltz, Mr. Elliott, Mr. Pestillo, your comment generally, is it desirable public policy to improve fuel efficiency?

Mr. OLSON. We have already indicated, and I did so in my testimony and we have done it several times before, that we would not oppose a CAFE bill, and we would be happy to work with you in constructing one that we think is fair and equitable.

Senator BRYAN. All right.

Mr. Benefield?

Mr. BENEFIELD. I think it is fair public policy but not at any cost—not by destroying the market place; not by destroying consumer choice.

Senator BRYAN. Those caveats will be noted for the record.

Mr. Boltz, how about you, sir?

Mr. BOLTZ. Well, Senator, we testified that further improvements in fuel efficiency can be made. And we told you that we intend to do so. But it is not for us to decide whether those should be legislated. We are not policy makers. We are auto makers and engineers. We are here today to tell you what we can and cannot do.

Presently, S. 279, as we stated, contains unreasonable increases in CAFE.

Senator BRYAN. Mr. Boltz, let me just interrupt you.

Mr. BOLTZ. We cannot separate the policy issue from the results of the bill, sir. I think it is a desirable result——

Senator BRYAN. Do you, sir, agree or disagree that fuel economy improvement is desirable? That is the question. Do you agree or disagree?

Mr. BOLTZ. We are in fact improving the fuel efficiency of our products.

Senator BRYAN. That is not my question.

Mr. BOLTZ. We have in the past, and we will do so in the future.

Senator BRYAN. Is it Chrysler's position, then, that they take no position that fuel efficiency improvements are desirable?

Mr. BOLTZ. Senator, we are on the record for this hearing, and for other hearings, in support of fuel efficiency improvements. In support of those policies. We have not disagreed with the 1975 CAFE law.

Senator BRYAN. That is what I am asking.

Mr. BOLTZ. We do disagree with this bill. And we will oppose it, because its requirements are unreasonable.

Senator BRYAN. Mr. Boltz, we understand that. We may not all be as educated as you are, but we do understand that.

So your position is that you support the objective of improved fuel efficiency for automobiles and do not agree with the bill. I fully respect that, and obviously we have given you the opportunity.

Mr. Elliott, how about you in terms of public policy?

Mr. ELLIOTT. Honda supports the direction of improvement in automobile fuel economy.

Senator BRYAN. Thank you.

Mr. Pestillo.

Mr. PESTILLO. Senator, you said in posing the question forget how you get there——

Senator BRYAN. How you get there, not trying to lock you into CAFE, giving you as much latitude as you want to run with it, but do you support the public policy of improved fuel efficiency for automobiles?

Mr. PESTILLO. To me, it is initially an economic question. We have to do it to stay competitive, so sure, we are going to do it. We accept the notion that it ought to be done. I think, given your constraints, that it does make sense.

Senator BRYAN. So at least five out of six of you endorse the public policy principle that fuel efficiency improvement for automobiles is desirable.

Now each of you has indicated that these are not attainable, and you have offered your reasons for it. Now let me begin with you, Mr. Olson, first, if I may, sir. If these are not achievable for the reasons that you have indicated, what is achievable?

Mr. OLSON. You have in your bill a two-tier setup that has two steps, 96 and 2001. Let me emphasize that the easy gains have been gained already in fuel economy.

Senator BRYAN. You have made that point.

Mr. OLSON. From here on it is going to be an uphill fight of inches, not miles.

Let me make a second point that as far as 1996 is concerned, it is already here from an engineering viewpoint. We will be introducing a new Camry this fall. It will be around until 1996 when we change it again. It will be built in Kentucky, incidentally.

Senator BRYAN. We will inform Senator Ford of that comment.

Mr. OLSON. I know, he is not here, unfortunately.

Mr. OLSON. This model accounts for one-third of our U.S. volume, so it is a key model, and we will have to live with it until 1996 once we introduce it.

I did note, for instance, that we increased the city fuel economy of the Tercel by 6 percent, but it is one of 14 vehicle lines we sell and the smallest.

Senator BRYAN. Mr. Olson, I do not want to cut——

Mr. OLSON. These are the things that have to do with the complexity. You are trying to simplify a complex question.

Senator BRYAN. But certainly in terms of the framework of this legislation, you are saying that you cannot get there. Let us assume for the sake of argument without conceding that you are right. To where can you get, or is this it?

Mr. OLSON. There is no way I can answer that question without knowing what the conditions would be in the place we arrive when we arrive there, which means economics. CAFE is a market-driven number. It is a sales weighted average, and in order to know what you are going to achieve 5 years down the road, you have to know what consumer sentiment is going to be, whether they are in a buying mood. You have to know what the economics of the situation are. You have to know what the price of fuel is. We cannot project that one year out.

I will give you a typical example. We increased the sales mix on our Tercel for this year by 30 percent over last year anticipating higher fuel costs, which have not materialized. We are going to have to back off that sales target, and that was just 6 months ago. You are asking for a 5-year projection. I cannot give you one.

Senator BRYAN. I did not ask you for a 5-year projection. I simply asked you if you cannot meet these criteria, and you have indicated that you cannot, what can you do and in what time frame?

Mr. OLSON. We know that we can improve and we know that we will improve by 199S. I am not going to put a number on it. I do not know a number.

Senator BRYAN. Okay. So you do not know a number, but you can improve and you do not know what it is.

Do you have some clue as to how we might ascertain what that number might be?

Mr. OLSON. I think the NAS study will be a very good clue.

Senator BRYAN. On behalf of your company, would you obligate and bind yourself to the result?

Mr. OLSON. I do not think I can do that sitting here at the table, and I do not like to sign blank checks.

Senator BRYAN. So the answer is no.

Mr. Eads, what do you think you folks can do, if anything, in terms of improvements? 27.5 is the standard now. Can you get to 29, 30, 31, 32?

Mr. EADS. I know, Senator, as Mr. Pestillo said, that we are actually going to have to work very hard just to stay where we are. There are a few safety and emissions requirements we are going to have to meet which in fact add weight and degrade performance, and if fuel prices do not increase significantly in real terms we are going to very hardpressed given our current fleet to hold the current average.

Senator BRYAN. Again, I want to be fair, so that the record is accurate in terms of your view. Are you indicating that you do not believe that any improvements in terms of fuel efficiency can be achieved within, say, the next 5 years, the next 10 years?

Mr. EADS. If fuel prices do not go up and if we have to meet the requirements of emissions and safety that we are going to have to meet, then we do not believe our fleet average is going to increase.

Senator BRYAN. So you do not think there is any technology that is available currently to improve the fuel efficiency with those constraints you just put on?

Mr. EADS. As a number of panelists said, there are lots of technologies out there, and if we could economically put them in our cars that would increase fuel economy. But as everyone else will also say, it is a matter of economics more than technological feasibility, and that is why we all ask that you wait for the National Academy study results.

Senator BRYAN. Would you be willing to agree to the support and adopt the recommended standard of the NAS study?

Mr. EADS. I do not sign blank checks, either.

Senator BRYAN. Perhaps we can get an answer from company headquarters, but at this point you are asking us to delay it to see what the results are but not indicating you would agree with it, then. Would that be a fair statement?

Mr. EADS. I have been involved long before I joined General Motors in a number of National Academy studies. The National Academy process is a very good one. When it operates properly it produces results that are fair and balanced. Sometimes it does not operate that way. I think you would also be reluctant to sign a blank check, too.

I am saying that the National Academy process, if it operates well, will give us a good sense about what the economically practicable fuel economy improvements might well be.

Senator BRYAN. Mr. Eads, again the record would reflect at this point General Motors offers no testimony to the committee as to what could be achieved from a technological point either in the next 5 or 10 years. That is a condition of the record, and I will give you an opportunity to correct that if it has been misstated.

Mr. Benefield, what do you think your company can do?

Mr. BENEFIELD. I am going to come at you from a little different direction. Because I am not familiar with what technology is employed in all of our engines, in every family, that is I do not know how much is being used in every case. I cannot give you an exact answer.

But what I will say is that we think it can be improved. I will let you pick the number if you will make it the same for all of us, and then if one fails we will all fail. If one can succeed, we will all succeed. If you will pick the number fairly, if you will study the data out of some legitimate studies and pick a fair and reasonable number based on the technology that is available and can be developed, we will live with it.

Senator BRYAN. So Mr. Benefield, Nissan's position at least as represented by you is that you believe that some improvements can be made in terms of efficiency. You do not know what those numbers are, but whatever number is selected, if everybody has to achieve that you will sign on for the duration. Is that fair?

Mr. BENEFIELD. We will give it a shot.

Senator BRYAN. Okay.

Mr. Boltz of Chrysler, you and I have talked a lot about this. What do you folks think can be done?

Mr. BOLTZ. Well, Senator, when we testified this morning, I referenced testimony before this subcommittee in September of 1989. We developed what we believed was our CAFE capability. And we indicated at that time that we thought we could improve our CAFE capability by 6.5 percent in the mid 1990's, and 10 to 15 by the year 2001.

I would like to underscore some of the things George Eads mentioned. Our projections carry a unique viewpoint. And Chrysler's viewpoint alone, as to what the market will look like in the middle of the 1990's and in 2001. And it also carries with it our views that energy prices, gasoline prices in particular, will probably rise 1 percentage point faster than the underlying GNP deflator.

Given those conditions, we think there is some potential to apply technologies, as we intend to do, and improve the fuel efficiency of our entire product range. If the market conditions are favorable and match our projections, we may very well be able to improve CAFE the amounts we state. We have opposed the bill because it is far beyond our reach.

I would like to mention one other thing. Chrysler's capabilities really do not matter. And that is not the issue here, the capabilities of any single manufacturer or group of manufacturers. What is at issue here, and I feel this very strongly, is that this body does not have the proper information to make a legitimate and intelligent decision regarding the CAFE potential for the new car and truck fleet as a whole, on out the next 10 years or so.

Before this body acts, it makes sense to us, it would make sense to the American public, and I think it made sense to Dr. Schneider that the National Academy of Sciences has something to say about global warming and CAFE. Gentlemen, the National Academy of Sciences will have something to say very shortly about CAFE and the potential of the industry to improve CAFE, the economic consequences of this legislation, and other methods of conserving energy.

I want to underscore the fact that, regardless of anyone's capability, you should indeed wait and gain the benefits of that study before proceeding with legislation of this type, and with S. 279 specifically.

Senator BRYAN. Mr. Boltz, would you be prepared to sign on to the results of that study?

Mr. BOLTZ. Senator, in asking whether or not Chrysler can support an NAS conclusion and has the capability to meet whatever number it may ultimately produce, is indeed a blank check. I would have to ask you, for some of the same reasons, are you willing to sign onto its report?

Perhaps you are. We would encourage you to do so. I do not know what that report will say, sir. I do not know whether or not it will confirm the numbers you propose. Or confirm that there is no capability. Circumstances being what they are, I say to you that I would be very happy to study the results of an objective look, prepared by the NAS, and correct my thinking if it is in error. Whether I can, carte blanche, sign up to it, I cannot say at this time.

Senator BRYAN. Mr. Boltz, you are not prepared to for the reasons that you have indicated. I understand that. You have indicated that we ought not to proceed forward because we do not have the information. We have the domestic Big Three. We have the import Big Three, and with the exception of yourself none of you at this point—and we have yet to hear from Mr. Elliott and Mr. Pestillo—have given us any indication of what you think you can achieve. So it is rather difficult on the one hand to ask us to forebear, to deride us for our lack of a factual predicate to proceed and you provide us no information or evidence to assist us in that process.

Mr. Elliott, let me throw that one to you, if I may. What do you think you can do?

Mr. ELLIOTT. I cannot speak for other manufacturers, but speaking for Honda, as I testified earlier, from our current CAFE position through the optimization of existing technologies, we can improve that by about 4 percent.

Senator BRYAN. Is that in 1995, or is that over the full decade or 1996 to the full decade?

Mr. ELLIOTT. That is through 1996, the 1996 model year.

Senator BRYAN. The 1996 model year. Did you look at what you thought you could do by the second plateau?

Mr. ELLIOTT. Well, I was going to go a little bit further. To go further than that, Honda has to kind of reevaluate its sales strategy in the U.S. market. Currently we are considering and are in the R&D stage, you might say, of the ultra high fuel economy model that we would consider offering prior to this period of time. There would be even higher fuel economy than the model I mentioned in my prepared summary. That model would probably further improve our CAFE.

Now there are some caveats here. First, the cost of economy would probably be high so that the car would probably be a little higher priced. There might be some tradeoffs in performance and size. Could we sell the number we need to sell? We need to sell probably in excess of 50,000 per year. But if we can do that, that will give us probably another 4 or 5 percent on top of our present CAFE.

So we are looking where we currently stand now at about 8 to 9 percent. To go past that in the framework of the 1996 model year, we have to seriously reevaluate our whole model line-up, as I mentioned in my text. We have to consider downsizing, radical changes, model elimination, things which frankly would put Honda back to the position of being a small subcompact manufacturer the way we were in the mid 1970's. Frankly, we are not really desirous of doing that.

Senator BRYAN. I appreciate your comments.

Mr. Pestillo.

Mr. PESTILLO. Sir, you put it in the context of CAFE, and there are really three factors at play, size, hardware and mix.

Size, obviously we have been reducing size as we try to keep interior space large, but we have done mostly what we can. We have replaced some steel with aluminum, but the next generation is the alloys composites and the like and honeycomb underpinning. That is cost.

Hardware. We have done a lot. We really are strapped by the considerations of clean air for the moment. We really have to understand how to do that. I had mentioned in my testimony about the fuel mix, for example. It is not simply a case of bolting on CAFE hardware on top of clean air hardware. We have to find a way to integrate them. That is where I think there is utility in the NAS study.

It has two bits of value, one in quantifying what can be done by various increments of hardware, but also at the same time in allowing us to look at the

cost and the applicability. There are some things that would work easily in luxury cars, larger cars, that will not be suitable for smaller ones. So we need to think our way through that.

Of course, next we talked about, and the one thing I think I would point out, is that in the depths of our despair, here, the two Ford plants which have not suffered great economic difficulty have been the large car plant and a truck plant. So the consumer preference is still towards larger, less-than-maximum fuel efficient vehicles.

Given all that, we are going to do more. We do not truly know how much more we can do, but I can tell you surely without the blank check you found you are not getting, I suppose, that we have committed what resources are required to cooperate with NAS in producing the best possible study. We are treating that as if it were regulation. In other words, we are going to have full cooperation and full compliance, and we want an intelligent study. I will go on as well to say we want it quickly. Our ambition is not to drag this through the legislative calendar and have you consumed by time. It is to get something out there with which we can deal quickly. We hope it comes away simple enough that we can at least examine our differences, weigh them or fuss about them.

Senator BRYAN. So you think that some further achievements in terms of technology are possible to give us a higher fuel efficiency but do not have the number. Is that a fair characterization?

Mr. PESTILLO. Yes, and they are factors of both cost and desirability. To what extent will higher fuel prices and less availability, should that take place, and we hope they would not.

Senator BRYAN. Mr. Pestillo, let me start again with you on a different line of questioning. All three, Mr. Elliott, Mr. Benefield and Mr. Olson, objected to the percentage approach that Senator Gorton and I have incorporated in this legislation.

What is Ford's view on that?

In other words, assuming, distasteful as it may be, that Senator Gorton through his own legislative skills is able to get this CAFE legislation passed and on to the President's desk, do you want the percentage approach to stay in, or do you want to go back to the numerical approach?

Mr. PESTILLO. We would prefer one we would more comfortably meet, obviously. Were the percentage approach to provide us with an acceptable level of attainment, we would accept the percentage approach.

Senator BRYAN. Let me just be clear. You prefer a percentage approach rather than a numerical approach?

Mr. PESTILLO. I prefer a standard we could meet.

Senator BRYAN. Let us assume for the sake of argument that that is not at issue. The only question is whether you favor the methodology incorporated in this bill, which is a percentage approach, or a numerical approach?

If I understand your testimony, and I want to be clear on the record, you favor a percentage approach?

Mr. PESTILLO. We would find that acceptable, Senator, yes.

Senator BRYAN. How about Mr. Eads, sir. What would your view of that be?

Mr. EADS. We appreciate the fact that you recognize and propose in the percentage approach that the original CAFE legislation had some unintended flaws in it. Our problem with both the percentage approach as well as the segment-by-segment approach that I heard proposed by some others is that if you look at the history of regulation, efforts to try to either create or reduce competitive disparities often have the reverse impact of what the legislative office intended, and as we try to understand what it would do, our people can find ways

in which we would come out very well but others in which we would be competitively disadvantaged.

We that if you are going to have any form of legislation, probably the simpler, clearer legislation the better.

Senator BRYAN. I am not sure that I have an answer to my question. Given a choice, if you have an opinion, do you favor the percentage approach or the numerical approach, or is it at this point that you have no opinion with respect to either of the two?

Mr. EADS. We would have to see what some of the other alternatives are . No opinion.

Senator BRYAN. Mr. Boltz.

Mr. BOLTZ. As you know, Senator, we testified that we were in favor of the percentage approach in S. 1224 basically for the reasons cited in the bill. If indeed the issue is to improve energy efficiency and national energy security, then we believe that the percentage increase approach would best ensure fleet average will improve among all manufacturers. Basically, for the reasons cited in your bill.

Senator BRYAN. Gentlemen, if I may, the question of safety has come up. Let me ask first, if I may, Mr. Olson, you talked about the Tercel. Am I correct on that?

Mr. OLSON. Yes.

Senator BRYAN. That is your small car, and you have done some things with it in terms of the technology, as you explained. My question to you is, is that a safe automobile? Should American purchasers be concerned about the safety of that car? Is that a safe car, in your opinion?

Mr. OLSON. Safety is a very relative term. If you are talking active safety, the better the car handles and the quicker it is, the more safe it is. If you are talking passive safety, crashworthiness, the Tercel is as safe or safer than any car in its size segment. I say it is relative because it depends what you run into. If you run it into a car that is twice its size, then it would not be safe relative to that bigger car. That is the law of physics. Mass wins.

Senator BRYAN. You have no hesitation, your company does not offer these automobiles as unsafe automobiles?

Mr. OLSON. Of course not.

Senator BRYAN. What do you have next? Is that the Corolla? Do you still have that? Is that still one of your model lines?

Mr. OLSON. Yes. Actually, there is some crossover. The Corolla is a little heavier, so logically if you apply the mass principle, the Corolla in a crash with a Tercel would be marginally safer than the Tercel, but I do not think it is that measurable. You have to get a real spread to have any effect.

Senator BRYAN. Mr. Eads, you are marketing the Metro, I think, the Geo, I believe? Is that a safe car?

Mr. EADS. Yes, sir.

Senator BRYAN. You have no concern? The public should not be worried about buying that?

Mr. EADS. No, sir.

Senator BRYAN. Mr. Benefield, your small line used to be the Sentra, was it? I do not know if that is still the smallest that you have.

Mr. BENEFIELD. Yes.

Senator BRYAN. That is a safe car, too?

Mr. BENEFIELD. Yes, it is a safe car.

Senator BRYAN. Mr. Elliott, you have the——

Mr. ELLIOTT. Currently, Senator, our Civic line and the CRX are our smallest cars, and obviously those cars meet and comply with all U.S. safety requirements, and they will. But basically, size is kind of a function of consumer choice, so there are consumers who will not choose a small car because of their perception of it being less safe. So that has to be considered, I think, in any concern about size.

Senator BRYAN. Let me yield. I will ask a few more questions, but Senator Gorton has been very, very patient. I know he has a luncheon meeting to go to, so let me yield to him now.

Senator GORTON. Mr. Eads, a pure question of fact. Do you know whether or not over the last few years that we could make a statement that on average a subcompact car is driven more miles per year than a compact and a compact more than a midsize, and a midsize more than a full-size car?

Mr. EADS. I do not have those numbers with me. I can get it for you. It would be fairly easy for us to pull out. They just do not come to mind. I am not aware of great differences among types of cars, for example, in amount driven.

Senator GORTON. I asked that because as I read your testimony, which I apologize for not having heard, some of the thrust of it seemed to be that to the extent that we increase gas mileage we increase the number of miles an automobile is driven. I just wondered whether we had an historic record which would indicate that to be the case.

Mr. EADS. There is no inconsistency involved.

What I was saying is that a higher fuel economy requirement has the same effect as a reduction in gasoline prices. For example, the bill that was proposed last year by this committee, we had a calculation that were it fully in effect it would be the equivalent of a reduction of 25 cents per gallon in gasoline in terms of fuel cost per mile driven and reducing gasoline prices 25 cents per gallon, all else equal, will increase driving.

Studies that have been done about the impact of CAFE not on labeled fuel economy but on fuel use have found that increased driving from a more fuel efficient fleet achieved in this way have offset about 30 percent of the theoretical improvement due to CAFE.

Senator GORTON. You anticipated my second question. It is not one to one.

Mr. EADS. It is not one to one, but what I am saying is that has in fact historically offset some of the improvement.

Senator GORTON. Let me ask you another question which, really, I suppose, could be asked of any member of the panel.

As I outline or interpret your objections to this CAFE standards bill, it is that there are grave technological difficulties, if not an impossibility, in reaching those goals; that much of the effort to reach those goals would consist of downsizing cars with an inevitable adverse impact on safety, and that it would cross-cut against consumer preference.

Assuming that I have outlined that position correctly, does that position differ at all from the position which was taken by your company at the time of the passage of the 1975 CAFE standards legislation?

Mr. EADS. In fact, if I have heard you correctly, it is very close to the position taken. I have with me testimony that my predecessor twice removed gave to a committee listing the objections that General Motors had at that time, and it was not, as was represented earlier, that somehow improvements in fuel efficiency were somehow technologically impossible but that, in fact, given what we felt then was going to be an energy crisis, given what we felt then would be a difficulty in getting consumers to buy smaller cars, we found it very difficult to see how we would meet the standard.

In fact, if I may quote from that, it says, directly quoting from the testimony, "I would like to remind the committee that the most fuel efficient car it is possible to produce would make no contribution to our national energy goal unless our customers were willing to buy it."

Now it so happens fortunately for the people who support CAFE that energy prices did increase, and when they increased, in fact, we not only met CAFE but we exceeded CAFE, and we have only had a problem in meeting CAFE as energy prices have fallen.

Now if we felt that there was going to be a substantial continuing real increase in the price of gasoline, then I would give you answers about where we think our technology would improve because we, like some others, would be planning to have fuel economy increase.

The problem we had is trying to sell higher fuel economy, smaller cars in a low energy price environment. That was a problem in 1975, and that is the problem today.

Senator GORTON. Then would you say that the testimony of your predecessor twice removed has been vindicated or contradicted by the history of the past 15 or 16 years?

Mr. EADS. I am very comfortable today to stand by the testimony as how CAFE would operate and some of the problems that you could get with it if energy prices had not increased, yes.

Senator GORTON. Mr. Boltz, a couple of words have been sometimes used in this testimony interchangeably. I think you were particularly precise in your use of a word, and I would like to ask you about it.

You emphasized very strongly that the standards in this bill in your view and the view of your company were unreasonable. Do you use that phrase as being a synonym of unattainable, or are those two quite different concepts?

Mr. BOLTZ. I think they are different concepts, Senator. I call it unreasonable, because we doubt very much that the basis has been established which would lead to attainment. I would not argue that it is beyond the power of the Congress to impose whatever standards it may wish to impose, at 20 percent or 40 percent if——

Senator GORTON. Well, we could impose a 200 percent, but I assume that would be unattainable.

Mr. BOLTZ. If I may finish, sir. In light of the 1975 law, in fact, 100 percent was attainable. I think, given the projections people had at the time, it might have been unreasonable to assume that it could be attained. Without major changes in gasoline prices and, more importantly, a major change in consumer behavior among the American public. Let us not forget, as we sit and debate the bill or as we sit in this session, that manufacturers have indeed made some improvements. And that Congress, in fact, has exercised some leadership. But in the end, it is the American public that actually improved the new car fleet average. By making purchase decisions to accept the vehicles offered.

Whether or not they will continue to buy those cars in the future, in an ever-declining size mix that would enable a 20 or 40 percent standard to be met, in the time frame you are considering—well, Chrysler doesn't think so. We think that the America public is quite satisfied with the size of the vehicles it has. We think they are satisfied with the performance level of those vehicles. And we think they will continue to seek those sizes and performance levels in the future.

I am an engineer, sir. I have to say that the bill's premise is fuel economy can be improved by the year 2001 by 40 percent, without change to vehicle size or performance levels. And it can be done using existing technologies. That is the only point of difference. We do not believe that to be true. We believe that if,

indeed, 40 percent is attained, it will be because performance levels deteriorate, and because vehicle sizes will be reduced. The vehicle size mix, on average, will be smaller in the future than it is today. If that is true, there will to have to be changes in consumer behavior brought to bear to make those vehicles acceptable. It is that simple.

In that context, I believe that 20 and 40 percent are unreasonable. What I believe, as I have already said, is not important. I think you have the opportunity to take advantage of a study by the National Academy of Sciences and the Department of Transportation. The results will be available very shortly that may help you sort this divergence of opinions. You have heard many today.

Senator GORTON. Thank you for a very precise answer to a precise question. Thank you, Mr. Chairman.

Senator BRYAN. Mr. Olson, let me turn to you next, if I may, and ask you this. You also have raised the point, as have your colleagues representing the import fleet in terms of the percentage approach that we have incorporated into this measure. I would note that with respect to Toyota the fuel economy fleet average in your company has declined in the past 2 years from 32.6 miles per gallon to the 1990 average of 30.5 miles per gallon.

Now if energy independence and improved fuel efficiency are desirable public policy goals—and I will underscore the word "if" to give you some latitude there—is there a legitimate public policy concern in the direction that your company is heading in terms of fuel economy?

Your fleet is less fuel efficient than it was just 2 years ago.

Mr. OLSON. It is the nature of business to grow. The degradation in our fuel economy over the last couple of years has come about because we have entered new vehicle size segments. If you look at each of the new machines we have introduced, you will find that they were very fuel efficient, versus their direct competition.

I will give you a typical example, the LS-400. If I am not mistaken—and I do not think I am—is the only performance, luxury performance sedan, V-8 in the United States market that does not carry a gas guzzler tax. We have introduced the most efficient, fuel-efficient machinery we can, each time we have gone to these new segments. The reason our overall has gone down is because we are, in fact, in new segments.

Senator BRYAN. Is it not fair to say, however, that unless the Congress takes a public policy action, that if the standard today is 27.5 miles per gallon, the fleet fuel efficiency average could continue to degrade without any sanctions from your present standard of 30.5 to 27.5? Is that in the public interest?

Mr. OLSON. We do not think it will degrade. I have already gone on record that we anticipate improvements over the next several years. What everybody at this table is objecting to is exactly what you just stated, that the law will dictate who may compete, in which segments—and, in fact, remove certain segments from the market.

Senator BRYAN. But it is still a harmonic average.

Mr. OLSON. Sure, it is a sales-weighted average.

Senator BRYAN. Sales-weighted average, that is right, by manufacturer.

Mr. OLSON. Yes.

Senator BRYAN. So as long as you attain whatever those percentages are you can, in effect, determine for yourself your marketing pattern, can you not?

Mr. OLSON. If you maintain the numbers, yes. But we would not be able to maintain the numbers you anticipate with our current marketing pattern. You would not only preclude us from entering further segments down the road, you would remove us from segments we are already in, if you pass this law.

Senator BRYAN. That assumes that no additional technology could be put into the existing fleet, though, does it not?

Mr. OLSON. We have a lot less headroom than the domestics do. We have applied, as I said in my testimony, most of the technology already identified by the OTA that are in our current models.

Senator BRYAN. But you would concede that there is some additional technology that could be incorporated.

Mr. OLSON. Of course, otherwise I would not be sitting here and saying yes, we anticipate that we will improve.

Senator BRYAN. Mr. Benefield, your company—not just to cite Mr. Olson's company—your fleet average in 1988 was 30.4 miles per gallon. It has now declined to 28.6. For those of us who believe that fuel efficiency and energy independence and environmental concerns are important public policy considerations for the Congress, your company, too, seems to be moving in the wrong direction in terms of overall fleet economy.

Mr. BENEFIELD. That is the appearance that those numbers give. But, in fact, every vehicle that we have redesigned within that time period got the same or better fuel economy than the previous one.

Two things happened: first, our customers moved up in class and market segment; and second, the sales of our most fuel-efficient vehicle, our Sentra dropped considerably because it was running out its model life for those 2 years. We have recently launched a new Sentra which has improved fuel economy over the previous Sentra. And we expect to get those sales back with the all new model. And we would foresee our mileage begin to improve again. But that is how it happens?

Senator BRYAN. Mr. Elliott, your company had a 1988 fuel economy of 32 miles per gallon as the fleet average. Today, that has declined to 30.6. I do not want to pick on Mr. Benefield and Mr. Olson. For some of us, that seems like we are heading in the wrong direction. Your response, sir?

Mr. ELLIOTT. Okay, to look at that, Senator, I think you have to consider that in 1986 we introduced a new Acura division to enter new market segments that Honda had not previously been in. That division has now grown to where, by next month, it will encompass four new product lines that were not in Honda's fleet as little as 4 years ago. So, we have grown and expanded into new market segments we were previously not in. These segments are generally mid-sized and larger, and even the sports car market.

Additionally, the 1990 Accord was the number one selling car in the U.S. last year, 417 thousand units, which was 15 percent higher than the 1988 sales of that same particular model. Obviously there is a consumer acceptance there of a model which is size, performance, fuel economy, price, that was something they wanted to buy. They made it the number one car in the U.S. These, together, have had an impact on Honda's corporate CAFE number.

Under the provisions of the bill we are discussing here today, the opportunity to participate in some of those market segments with our Acura division would be lost to us. We could not participate in those markets. Nevertheless, though, as I stated earlier, we do have plans to improve our corporate CAFE numbers.

Senator BRYAN. Mr. Elliott, let me just pick on you for one more question, if I may.

The Asian manufacturers' fuel economy, overall, declined 6 percent in the 2-year period 1988-1990; weight increased by 9 percent; and horsepower increased by 22 percent. For some of us, those are disturbing trend lines. Let me get your response. I know we picked on you twice.

Mr. ELLIOTT. Okay, well I can start off—if you looked at each model in the line, I do not think that you would find that, say, the performance increased dramatically—the horsepower, per se. Say, our Civic line, perhaps, did not increase horsepower by 22 percent. But if you look at some of the addition of our models such as Legend, Integra, NSX, obviously those have impact on the Asian segment as far as horsepower increase.

Weight, yes, some of the cars have gotten larger and so the weight of the cars has increased.

Senator BRYAN. Mr. Eads, you have had some skepticism about whether CAFE really ought to be credited with dramatic achievements, and I think Mr. Pestillo put it most graphically in perspective. I was enormously impressed with that little piece of evidence that you shared with us, that the Lincoln Town Car, the largest automobile that the Ford Motor Company offers today, has better fuel economy today than the smallest product offering that the Ford Motor Company offered in 1973. That says an awful lot, it seems to me, when I recall having read the 1975 auto industry testimony of how little could be done, and why we ought not to move to a CAFE standard.

Mr. Eads, you do not seem to think that CAFE really ought to be credited with much of that improvement. And I think you have emphasized, as I recall—not only from your testimony this morning that I have read and heard, but—from our conversations before, that you really think that the price of fuel is a critical factor in terms of fuel efficiency, do you not?

Mr. EADS. I am saying that most independent studies that have looked at the matter have reached that conclusion, yes.

Senator BRYAN. Let us assume, for the moment, that we abandon CAFE, and believe it to be, as you do, a flawed process, that it really does not work, but that we also should try to improve fuel economy, and that we do so strictly in a market in which fuel prices rise.

How much per gallon would gasoline have to increase, in your judgment as an economist, to achieve a 10-percent overall savings in the amount of fuel that we consume in the automotive passenger fleet in this country?

Mr. EADS. Probably about—over the longer term—maybe 10 to 20 percent if held there, and held against inflation.

Senator BRYAN. Okay, so 10 to 20 percent, and that would be adjusted for inflation in the out years?

Mr. EADS. Yes.

Senator BRYAN. What would the market have to do, in your view, to go to 40 percent, say, by the year 2001—which is the framework of this bill, as you know?

Mr. EADS. No, this bill is not that. This bill, in fact, deals with the fuel economy potential of particular cars. You talked about the amount of fuel that is saved.

Senator BRYAN. Well, the authors of the bill believe it will save 2.5 million barrels each and every day. I respect your right to disagree with that premise. But let us assume that 2.5 million barrels per day is the goal to save. What would have to happen with respect to gasoline prices by the year 2001 to achieve that 2.5 million barrels—acknowledging that you do not agree that this bill does that, but that is the goal?

Mr. EADS. Let us make sure we really understand how we are disagreeing. The number I gave you earlier that about a 20-percent increase in fuel prices, if maintained in real terms, could, over the long-term—once people have adjusted—lead to a maybe 10-percent improvement in fuel burned. A relatively small amount of that would come from the actual change in the fuel efficiency—let us again refer to the example in Europe.

In Europe and Japan, fuel prices are in the $3 to $5 a gallon range, translated to American dollars. The—as was said by several of the witnesses—average fuel economy rating of their fleet, and I know it is difficult because of test procedures to compare, is something in the order of the middle 30 miles per gallon. And yet, in Germany, the fuel use per capita for automobile purposes is something on the order of 40 percent of the U.S. current level. In Japan and Italy—and this is based upon data from Dr. Shipper, at Lawrence Berkeley Lab—is around 20 percent of the U.S. level. So most of that savings is due to less-intense use. He has attempted to correct for the fact that some of these countries are smaller, and that does not account for a very large amount of the difference.

So what I am saying, is that if you are saying what would it take to get fuels with an average fuel efficiency—cars with an average fuel efficiency of the levels in this bill, I am not sure that is——

Senator BRYAN. That is not my question.

Mr. EADS. Well, I thought it was, because I am saying, I am not sure that, in fact, would be achieved.

Senator BRYAN. No, no, no—what I am talking about is that the premise of the bill, which you disagree with, is that by the year 2005 this legislation will, in the view of those of us who advocate it, reduce consumption by 2.5 million barrels a day. That is what we can reduce fuel consumption by. We achieve it through the efficiencies to which we think that this bill drives the industry.

But putting the efficiency aspect aside, what would have to happen in the marketplace, what kind of cost increases in gasoline would, in effect, achieve the same 2.5 million barrels a day of savings, if we set that as a goal?

Mr. EADS. I would have to check myself, but just off the top of my head, something like a 40 to 50 percent increase in real terms, maintained over time in the price of gasoline.

Senator BRYAN. I thank you.

Gentlemen, we thank you very much. We are going to leave the record open because some of our colleagues may have some additional questions to ask of you. We appreciate your testimony and obviously we will be visiting with you again.

Our final panel—I was going to say this morning, but I see that it is now this afternoon—consists of Mr. Jay Hair, who is the President of the National Wildlife Federation; Mr. Marc Ledbetter, the Deputy Director of the American Council for an Energy Efficient Economy; Ms. Deborah Bleviss, the Executive Director of the International Institute for Energy Conservation; and Mr. Dick Warden, Legislative Director of the United Auto Workers.

And I note that Mr. Warden has announced his retirement. He is an old friend, both to this subcommittee and to the chairman, personally. And we are delighted to have him here today in what might be a farewell performance to the committee, and perhaps the Congress.

Gentlemen and ladies, it is very nice to have you with us. We will begin our testimony. Mr. Warden, why do we not begin with you, sir?

STATEMENT OF DICK WARDEN, LEGISLATIVE DIRECTOR, UNITED AUTOMOBILE, AEROSPACE & AGRICULTURAL IMPLEMENT WORKERS OF AMERICA, UAW

Mr. WARDEN. Thank you very much, Mr. Chairman.

We are delighted to have the opportunity to be here to testify on behalf of the UAW. My name is Dick Warden. I am the Legislative Director of the UAW. And I am accompanied today by Alan Reuther, an Associate General Counsel in our Washington office.

Our President, Owen Bieber, wanted to be here to testify today, but he is unable to do so because of his participation in the meeting of the AFL-CIO Executive Council in Florida, this week. He asked that I express his regrets to you, Mr. Chairman, and to other members of the subcommittee for his not being here.

The UAW supported the fuel-efficiency measure that was enacted into law in the mid-1970's. The enactment of that legislation, in our view, represented wise public policy. We believe the CAFE standards have helped to make the automobiles on our Nation's highways today more fuel efficient. The UAW continues to support that statute.

We also support several provisions of your new bill, but we cannot support S. 279 in its entirety. And we welcome this opportunity to explain why.

We do not oppose an increase in the fuel economy requirements for motor vehicles. We believe the manufacturers will be making such improvements in the future. But it is essential that increases that may be required by Federal law be feasible technologically. Almost everyone who has testified has referred to the NAS study. And I am not going to spend a lot of time talking about that. In fact, when you are the last witness—or almost the last witness—it is difficult to find anything to say that has not been said before.

But obviously we look forward to the results of that NAS study too, because the studies that we have seen and the information that has been made available to us are not in agreement. Perhaps the NAS study will be a point around which people can coalesce in some agreement. And so we are looking forward to that. And we would hope that perhaps the committee could hold off action until that time, and we all have an opportunity to go over that study.

In the last Congress we opposed S. 1224, the bill you sponsored along with other members of the Senate. We did so, because it proposed standards that in our judgment are not feasible. Your new bill, S. 279, would require a 20-percent improvement in each manufacturer's fleet by 1996, and 40-percent by the year 2000. Unfortunately—and we wish this were not the case—we cannot support those standards. We would have to oppose this year's bill for the same reasons that we opposed last year's bill.

Given the technology that is available, it is our view that increases of that magnitude cannot be achieved without making substantial changes in the product mix. That statement is based upon our best judgment. We are convinced, after analysis of information from a variety of sources, that full implementation of existing technology could not reach the level of increases required by S-279.

Now if that is indeed the case, there would have to be significant changes in the kinds of automobiles and light trucks the manufacturers produce. If the product mix had to be changed, perhaps phasing out production associated with family-sized larger, and less fuel-efficient cars, it could lead to plant closings and job loss for workers in those plants and in related industries.

We cannot support legislation, Mr. Chairman, that we believe would place the jobs of our members and workers in other industries—allied industries—in serious jeopardy. I think you understand—I know you do, because we have talked about this privately—the industry has been rather badly battered, recently. And frequently, the workers suffer the most as a result of this. We are going through a period now, because of the additional requirements under the Clean Air Act, because of the recession generally, and because of a number of other problems, a large number of our members are out of work on indefinite or temporary lay-off.

Basically, we support what you are trying to do. But we cannot support these numbers, because we just do not think they can be reached without changing the mix. Translated, that means changing what you are producing. And as people

who know about the automobile industry understand, that means that you are going to be closing plants, you are going to be phasing out models, and it causes dislocation that, inevitably, affects the welfare of the workers.

Now having stated our opposition to the levels of fuel efficiency improvement that would be mandated by S. 279, let me say that we do support the approach of your bill. We believe you are correct in applying the percentage increase requirements of your bill to the domestic and foreign fleets of cars. All companies would be required to improve their fuel economy, thus producing the maximum energy efficiency from the CAFE standards.

In addition, because the companies would have to average percentage improvements in both foreign and domestic fleets, it would make it more difficult for them to raise their domestic fleet average by out-sourcing large cars—producing their large cars abroad and bringing them into this country for sale.

And since all firms would have to achieve improvement in fuel economy, it would be more difficult for any company to move in the more high-performance vehicles, the point that you were raising with the last panel. That should reduce any CAFE-related competitive disadvantage that might exist for full-line producers.

One issue of concern to the UAW, which your bill fails to address—and we thought we would put a plug in it for it again this year as we did it last year. We mentioned when we testified before that small car outsourcing is more than a jobs issue. It also threatens our automotive base in the long run. We suggest that your bill could be improved by providing a CAFE incentive for domestic, fuel-efficient car production. A CAFE credit for such vehicles would provide an incentive to bring small car production back to under-utilized U.S. factories. We believe that a provision such as that would represent a significant improvement in your bill and would, obviously, employ more workers in this country, which we certainly are interested in.

With that, Mr. Chairman, and since the red light has come on, let me just say thank you very much for giving us this opportunity to come in again and testify.

[The statement follows:]

STATEMENT OF DICK WARDEN, LEGISLATIVE DIRECTOR UNITED AUTOMOBILE, AEROSPACE & AGRICULTURAL IMPLEMENT WORKERS OF AMERICA, UAW

Mr. Chairman, my name is Dick Warden. I am the Legislative Director of the UAW. Accompanying me today is Alan Reuther, Associate General Counsel in the UAW Washington Office. We are pleased to be here today to share with you the views of the UAW on the fuel efficiency issue.

Our President, Owen Bieber, wanted to be here to testify today, but he is unable to do so because of his participation in the meeting of the AFL-CIO Executive Council in Florida this week. He asked that I express his regrets to you, Mr. Chairman, and to other members of the Subcommittee.

The UAW supported the fuel efficiency measure that was enacted into law in the mid-1970s. The enactment of that legislation, part of the Environmental Policy and Conservation Act, in our judgment, represented wise public policy, and the so-called CAFE standards have helped to make the automobiles on our nation's highways today more fuel-efficient. The UAW continues to support that statute.

In 1 975, we advocated the approach to CAFE standards which proposed to require the fuel economy of each company to be averaged across separate domestic and foreign fleets. As you know, that is the way the statute was structured.

We believed then that standards based on fleetwide averages would have several advantages. First, the law would act as an incentive for the motor vehicle manufacturers to make progress toward improved fuel efficiency. Second, we thought the fleetwide average approach would al low the companies the flexibility to provide a full range of vehicles. Finally, because we were concerned that domestic manufacturers, comparatively inexperienced in small car production, might try to meet the fuel economy standards by importing small cars, we hoped the separate fleet averaging requirement would promote American jobs in small car production.

We believe now that your new bill represents an important and constructive contribution to the debate on the fuel economy issue, and we do endorse several of its provisions. In its present form, however, we cannot support S. 279 in its entirety, and we welcome this opportunity to explain why.

We do not oppose an increase in the fuel economy requirements for motor vehicles. We believe the manufacturers will be making such improvements in the future. But it is essential that increases that may be required by federal law be feasible technologically.

In the last Congress, we opposed S. 1224, the bill sponsored by you and others, Mr. Chairman. We did so because it proposed standards that, in our judgment, are not feasible. Your new bill (S. 279) would require a 20 percent improvement for each manufacturer's fleet by 1996 and 40 percent by the year 2001. For the same reason we opposed the bill last year, we must oppose S. 279, in its present form, in this Congress.

Given the technology that is available, we believe increases of the magnitude called for in S. 279 cannot be achieved without making substantial changes in the product mix. That statement is based upon our best judgment. We are convinced, after analysis of information from a variety of sources, that full implementation of existing technology could not reach the level of increases required by your legislation.

If that is indeed the case, there would have to be significant changes in the kinds of automobiles and light trucks the manufacturers produce. If the product mix had to be changed, phasing out production associated with family-sized, larger and less fuel efficient cars, it would lead to plant closings and job loss for workers in those plants and in related industries. We cannot support legislation that would place the jobs of our members and other workers in serious jeopardy.

Mr. Chairman, the foregoing should not be interpreted to mean that the UAW would oppose any increase in the fuel efficiency standards. We could endorse an increase, but the requirements would have to be technologically feasible. Motor vehicles produced in this country and those imported into this country should be more fuel efficient. We need improvement—especially now when we are faced with the need to develop more effective energy conservation programs because of the uncertainty about future energy supplies and our need to become more energy- independent. If that were not clear a year ago, it certainly should be now in light of the conflict in the Persian Gulf. Having stated our opposition to the levels of fuel efficiency improvement that would be mandated by S. 279, let me say that we do support the approach of your bill. We believe you are correct in applying the percentage increase requirements of your bill to the domestic and foreign fleets of cars. All companies would be required to improve their fuel economy, thus producing the maximum energy efficiency from the CAFE standards.

In addition, because the companies would have to achieve percentage improvements in both foreign and domestic fleets, it would make it more difficult for them to raise their domestic fleet average by outsourcing large cars. And since all firms would have to achieve improvement in fuel economy, it would be more difficult for any company to move into more high performance vehicles. That should reduce any CAFE-related competitive disadvantage that may exist for full line producers.

We also believe it is important to retain the administrative discretion to relax or strengthen standards which is now in the law. It is impossible to anticipate all events through 2001 which may prevent manufacturers which are acting in good faith from complying with the law.

One issue of concern to the UAW which your bill fails to address directly is the outsourcing of small cars. We mentioned this concern when we testified in the last Congress on S. 1224. Small car outsourcing is more than a jobs issue. It also threatens our automotive base in the long run.

We suggest that your bill could be improved by providing a CAFE incentive for domestic fuel efficient car production. A CAFE credit for such vehicles would provide an incentive to bring small car production back to underutilized U.S. factories. In our view, such a provision would represent a significant improvement in S. 279.

Mr. Chairman, let me once again thank you for giving the UAW this opportunity to address the important issue of motor vehicle fuel economy.

Senator BRYAN. Thank you very much, Mr. Warden.

We will note that in the cat bird's seat, sitting to your left is Mr. Reuther, who will soon occupy the hot seat, perhaps the next time this issue is visited. It is nice to have you today, as well, Mr. Reuther. Mr. Hair, we will hear from you next.

STATEMENT OF JAY D. HAIR, PRESIDENT, NATIONAL WILDLIFE FEDERATION

Mr. HAIR. Thank you, Mr. Chairman.

My name is Jay Hair. I am the President of the National Wildlife Federation. I appreciate this opportunity to enthusiastically support S. 279, the Motor Vehicle Fuel Efficiency Act.

My testimony today, which I am summarizing at this time, is also presented on behalf of the Energy and Environmental Study Institute and the listed environmental, consumer, religious and scientific organization members of the

energy conservation coalition, as well as—obviously—the National Wildlife Federation.

Mr. Chairman, we applaud you and your primary co-sponsor, Senator Gorton, as well as the other co-sponsors on the committee, Chairman Hollings, Senators Bentsen, Gore, Kerry and Robb, for renewing your leadership on this vital issue, after your very fine efforts late last year.

Enactment of S. 279 is the single most important step Congress can take this year to slow global warming, increase energy independence, decrease the trade deficit, save consumers money at the gas pump, and obviate any perceived need to destroy environmentally-sensitive areas such as the coastal plain of the Arctic National Wildlife Refuge, for a mere few weeks of supply of oil.

The ability of our environment to sustain life has come to depend, to a large extent, on the energy choices we make—in particular, how efficiently we use our energy supplies. Unfortunately, the Bush Administration has failed to recognize that a central goal of any meaningful national energy policy must be substantial improvements in the fuel efficiency of cars and light trucks.

Instead, the Administration's national energy strategy relies upon draining America dry, in order to prolong, briefly, our excessive dependence on environmentally- destructive, non-renewable oil supplies. This is not the time for more of the same business-as-usual policy that has led to repeated energy crises.

It is the time for the leadership offered by you, Senator Bryan and you, Senator Gorton, in requiring improvements in auto fuel economy to help avoid the continuing damage and shocks to our national environmental, economic and energy security from our dependence on crude oil.

We strongly support S. 279 with amendments to raise the required increase in auto fuel efficiency by model year 2001 to 60 percent, or about 45 miles per gallon for the overall new car fleet, and 35 mpg for light trucks, and to institute truth-in-testing to correct for admitted discrepancies between the standards and actual on-the-road fuel economy.

I would like to encourage prompt action on S. 279 in the Senate, in order to give the House time to pass this bill this year.

In closing, it is worth noting that the Persian Gulf Crisis precipitated the third energy crisis in 15 years. We learned from the first oil crisis in 1973 that Americans are ready, willing, and able to embrace energy-efficiency measures enthusiastically, if only our political leaders will lead in the right direction.

One of the important lessons of that first crisis was that "CAFE works." S. 279 builds upon the success of that legacy, and when enacted will help put America on the right track to the 21st Century.

And finally, unlike what one automobile manufacturing advertising jingle would like us to believe, the heartbeat of America is not an automobile. The American heart beats for peace, environmental protection, energy efficiency, and sustainable economic development.

S. 279 helps deliver on all those desired goals of our society.

Thank you, sir, for this opportunity.

[The statement follows:]

STATEMENT OF JAY D. HAIR, PRESIDENT, NATIONAL WILDLIFE FEDERATION ON BEHALF OF THE NATIONAL WILDLIFE FEDERATION THE ENERGY AND ENVIRONMENTAL STUDY INSTITUTE AND THE FOLLOWING MEMBERS OF THE ENERGY CONSERVATION COALITION (ENVIRONMENTAL ACTION, FRIENDS OF THE EARTH, THE NATIONAL AUDUBON SOCIETY, THE NATURAL RESOURCES DEFENSE COUNCIL, PUBLIC CITIZEN, THE RENEW AMERICA PROJECT, THE SIERRA CLUB, THE UNION OF CONCERNED SCIENTISTS, THE UNITED METHODIST CHURCH- BOARD OF CHURCH AND SOCIETY, AND THE UNITED STATES PUBLIC INTEREST RESEARCH GROUP)

Mr. Chairman and Members of the Subcommittee, my name is Jay D. Hair, and I am President of the National Wildlife Federation (NWF). I appreciate the opportunity to testify on behalf of NWF, the Energy and Environmental Study Institute (EESI) and the Energy Conservation Coalition (ECC) member organizations listed below, in support of S. 279, the Motor Vehicle Fuel Efficiency Act.

NWF is the nation's largest conservation-education organization with over 5.8 million members and supporters in 51 states and territories. We are deeply concerned about the environmental consequences of our nation's heavy reliance on fossil fuels to transport people and goods, power our businesses, and light our homes.

My written testimony today is also on behalf of EESI and the following ECC environmental, consumer, religious, and scientific member organizations: Environmental Action, Friends of the Earth, the National Audubon Society, the National Wildlife Federation, the Natural Resources Defense Council, Public Citizen, the Renew America Project, the Sierra Club, the Union of Concerned Scientists, the United Methodist Church- Board of Church and Society, and the United States Public Interest Research Group.

Mr. Chairman, we applaud you and your primary cosponsor, Senator Gorton, as well as the other cosponsors on the Committee--

Chairman Hollings, and Senators Bentsen, Gore, Kerry and Robb, for renewing your leadership on this vital issue after your fine efforts last year.

On February 8, 1991, a broad spectrum of environmental, energy, religious and citizen groups sent a letter to President Bush urging him to "make increases in automobile fuel efficiency the centerpiece of your National Energy Strategy." A copy of this letter is attached to this testimony. While the Bush Administration apparently has not yet seen the light, any meaningful national energy strategy must have as a central goal improving the fuel efficiency of our automobile and light truck fleet.

The implementation of this goal will have a multitude of benefits. In fact, enactment of S. 279 is the single most important step Congress can take this year to slow global warming, increase energy independence, decrease the trade deficit, save consumers money at the gas pump, and obviate any perceived need to destroy environmentally sensitive areas, such as the Arctic National Wildlife Refuge, for a few week's supply of oil. Strengthening vehicle fuel efficiency standards is thus a top priority for the National Wildlife Federation and for the environmental, consumer and other groups for whom I am speaking today.

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Solutions to the problems of national energy dependence, global warming, air pollution, and the threat of tanker spills all turn on the issue of our use of oil, and oil means cars and light trucks. Motor vehicles account for over 50 percent of U.S. oil consumption.[1]

WIDESPREAD SUPPORT FOR ENERGY EFFICIENCY

Recent national polls conducted for the Union of Concerned Scientists have demonstrated overwhelming public support, exceeding 80%, for requiring 40 to 45 miles per gallon automobile efficiency standards by model year 2001.

The Energy Department's "Interim Report on the Administration's National Energy Strategy" summarized the results of its public hearings as follows:

> People in all parts of the country expressed concern about what energy production and consumption are doing to our air, water, and land. . . .
>
> The single loudest message was to increase energy efficiency in every sector of energy use. Energy efficiency was seen as a way to reduce pollution, reduce dependence on imports, and reduce the cost of energy.

Page 4 (Emphasis added). Unfortunately, the Bush Administration has rejected this and other proposals for increasing national

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[1] J. MacKenzie and M. Walsh, Driving Forces: Motor Vehicle Trends and their Implications for Global Warming, Energy Strategies, and Transportation Planning 1 (World Resources Institute, Dec. 1990).

energy efficiency, choosing instead to take a business-as-usual approach to our energy problems.

Other witnesses at this Committee's hearings last year and today have provided technical information demonstrating the feasibility of the proposed standards. I would like to focus on the relationship between this legislation and progress toward broad environmental and other national goals.

In brief, enactment of S. 279 will:

* Represent the most important element of a meaningful, environmentally sustainable national energy policy, based on increasing the efficiency of our energy use and national energy security.

* Constitute the single most important step Congress can take this year to curb global warming gases.

* By 2010, save 3.2 million barrels of oil each day. This is more than ten times the Interior Department's optimistic estimate of the daily production of the Arctic National Wildlife Refuge, assuming it contains economically recoverable oil reserves. These savings would eliminate the need for approximately 868 Exxon Valdez size supertanker

trips each year, with the associated risk of major spills.[2]

* Yield car owners billions of dollars in net savings each year in lower fuel costs; drivers of all models of cars and light trucks can and should benefit from technology to increase fuel economy.

* Reduce the trade deficit (according to the Commerce Department, in 1989, $49 billion, or almost half, of the nation's $108.6 billion trade deficit was oil imports).

* Reduce the economy's susceptibility to shocks from drastic changes in oil prices and cut-offs of supply.

I would like to address some of these issues in more detail.

NATIONAL ENERGY SECURITY

Concern about the control of Persian Gulf oil is a major reason why Americans are in harm's way in Saudi Arabia. We can support our troops fighting in the Persian Gulf by taking action domestically to lessen the chances for future conflicts by reducing our addiction to oil. By 2005, daily savings from S.

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[2] The 3.2 million barrels of oil saved each day times 365 days equals 1.168 billion barrels a year. Dividing this by the 1.345 million barrels average of the summer and winter capacity of the Exxon Valdez, equals 868.4 supertanker trips.

279 will total about three-and-a-half times the 730,000 barrels of oil we imported daily from Iraq and Kuwait combined prior to Iraq's August invasion of Kuwait.

GLOBAL WARMING

By far the largest contributor to global warming is energy consumption, primarily from the burning of fossil fuels.[3] The refining of one gallon of gasoline and its consumption by an automobile produces emissions that combine with the atmosphere to create about 24 pounds of carbon dioxide, the largest single contributor to global warming.[4] Over its estimated useful 100,000 mile life, a 28 mpg car thus produces approximately 43 tons of this gas, while a 45 mpg car produces about 26.6 tons. Vehicles are also major emitters of nitrogen oxides and volatile organic compounds, which are sources of lower atmosphere ozone, another major greenhouse gas and the principal ingredient of smog, a serious problem in urban areas.

All major vehicular air pollutants can be reduced while improving efficiency. Researchers in the Energy and Resources Group at the University of California at Berkeley have found that the most

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[3] J. MacKenzie and M. Walsh, supra note 1, at 3-5.

[4] G. MacDonald, The Long-term Impacts of Increasing Atmospheric Carbon Dioxide Levels (Ballinger, Cambridge, MA 1982).

efficient cars available today also have the lowest emissions.[5]

Continuing increases in vehicle fuel efficiency are absolutely essential to any effort to curb global warming. The carbon dioxide emissions from vehicles are inversely proportional to their fuel economy. Quite simply, to lower carbon dioxide emissions from cars and light trucks, we must raise their fuel economy.

S. 279 will not only mandate efficiency improvements for automobiles and light trucks sold in the United States, it will also determine indirectly the efficiency and associated emissions of the world light vehicle fleet in two major respects.[6]

First, the United States' share of total world vehicle sales is very substantial; in 1988, almost 16 million new and replacement vehicles were sold in the U.S., about a third of total world production for 1988. Thus, the desire of other countries to export to the United States market means that the design of vehicles sold elsewhere will be determined largely by United States' motor vehicle efficiency requirements.

Second, increased efficiency of new cars has an impact far beyond

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[5] This evidence was summarized by Senator Lieberman during the floor debate on S. 1224, last year's bill. 136 Cong. Rec. S13691 (Sept. 25, 1990).

[6] J. MacKenzie and M. Walsh, supra note 1, at 16.

the "useful life" of the vehicles. Many vehicles that are retired from service in the United States and other developed countries are exported to the developing world, where their relative efficiency will decide the rate of global fuel use, production of global warming gases and pollution for years to come.

REDUCTION OF THREATS TO THE ENVIRONMENT

By 2010, S. 279 would eliminate the need for approximately 868 supertanker trips every year and their associated environmental risks, as well as the environmental destruction of fragile natural areas wrought by oil exploration and development.[7]

Following the disastrous March 23, 1989 Exxon Valdez oil spill, I traveled to the devastated areas and surveyed the damage, returning in September to assess Exxon's largely futile attempted summer cleanup. I also served, along with national and Alaskan conservation and political leaders, on the Citizens Commission the National Wildlife Federation helped organize. We held public hearings in November, 1989 on the Exxon Valdez oil spill, in Anchorage, Cordova, Homer, Kodiak and Old Harbor, Alaska. These hearings demonstrated the spill's continuing economic, social and

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[7] See Trustees for Alaska, Natural Resources Defense Council and National Wildlife Federation, Oil in the Arctic: The Environmental Record of Oil Development on Alaska's North Slope (Jan. 1988).

environmental devastation.[8]

Reducing the number of tanker trips reduces the chances of a catastrophic spill along our coasts and in major, congested East and West Coast ports. From 1980 to 1986, the Coast Guard reports that 91 million gallons of oil spilled into U.S. waters, two thirds of it from oil tankers and barges.[9]

In addition, reducing our use of oil will also reduce the spills that occur almost routinely in every state of the Union at every stage of the industrial process in the transportation, refining, storage and use of oil. In the year following the Exxon Valdez spill, experts estimate that there were 10,000 spills, more than 27 a day, polluting America's land and water with 15 to 20 million gallons of oil in one year.[10] Worldwide, during the past 20 years, tanker spills of the magnitude of the Exxon Valdez--more than 10 million gallons--have occurred approximately yearly. Spills of up to 1 million gallons have occurred approximately

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[8] National Wildlife Federation, Natural Resources Defense Council, Wildlife Federation of Alaska, Windstar Foundation, The Day the Water Died: A Compilation of the November 1989 Citizens Commission Hearings on the Exxon Valdez Oil Spill (1990).

[9] Natural Resources Defense Council, No Safe Harbor: Tanker Safety in America's Ports 2 (1990).

[10] The Wilderness Society, 100 Spills 1,000 Excuses 1 (March 1990) (which examined the worst of these spills).

monthly.[11]

Proposals to open the Arctic National Wildlife Refuge and sensitive offshore areas to oil drilling would increase the amount of tanker traffic and the associated risk of spills. For example, development of the Arctic Refuge, if successful, would add a total of thousands of additional tanker trips, exposing the coast of Alaska, the West Coast and elsewhere to a dramatically increased risk of spills.

Moreover, the savings from S. 279 will be permanent, as opposed to the short-term results that would be obtained by draining non-renewable domestic oil reserves in environmentally sensitive areas at the cost of irreversible environmental damage. Cumulative sustainable oil "production" by the time S. 279 is fully implemented will far exceed the Interior Department's latest optimistic estimate of the entire nonrenewable life of any economically recoverable oil reserves in the Arctic National Wildlife Refuge.

THE SUCCESS OF PREVIOUS CAFE LEGISLATION

Congressional establishment of mandatory vehicle fuel efficiency

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[11] Alaska Oil Spill Commission, State of Alaska, Spill, The Wreck of the Exxon Valdez: Implications for Safe Marine Transportation, Executive Summary of the Commission Report 11 (Jan. 1990).

standards in the Energy Policy and Conservation Act of 1975 has been one of our nation's most successful energy initiatives. New car efficiency, as measured by EPA, doubled between 1974 and 1988, increasing to about 28 mpg.[12]

The standards adopted by Congress in 1975 now save 2.5 million barrels of oil a day. This means that our citizens save over $40 billion a year on gasoline which they can spend or invest in other sectors of the economy.

The automobile companies are trotting out the same scare tactics against S. 279 that they used against the original CAFE legislation. As the Committee is aware, in 1974, the Ford Motor Company testified that achieving 27.5 mpg by 1985 "would require a Ford product line consisting of either all sub-Pinto-sized vehicles or some mix of vehicles ranging from a sub-sub-compact to perhaps a Maverick."[13] This dire prediction, of course, has not turned out to be true.

In fact, CAFE standards spurred innovation and helped our competitiveness. U.S. efficiency improvements began with the industrialized world's least-efficient car fleet; only after the congressionally mandated improvements are typical U.S. cars

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[12] J. MacKenzie and M. Walsh, supra note 1, at 23.

[13] Ford Motor Company Statement on S. 1903, Hearing on Energy Conservation Working Paper Before the Senate Comm. On Commerce, 93rd Cong., 2d Sess. at 177.

generally as efficient as those in the same weight class in other countries.[14] The initial CAFE legislation helped the competitiveness of the domestic auto industry by resulting in automakers producing more efficient cars when consumers were demanding them. New CAFE standards will similarly benefit the industry.

THE NEED FOR CONTINUED MANDATORY PROGRESS TOWARD FUEL EFFICIENCY

Unfortunately, the fuel efficiency of U.S. cars has slipped, declining significantly from 1988 to 1990, according to EPA, while horsepower increased 10 percent. As a recent World Resources Institute report concluded: "EPA data suggest that the fuel efficiency wars of the late 1970s gave way to horsepower wars in the 1980s."[15] Incredibly, General Motors is introducing a Buick Roadmaster wagon that gets only 16 mpg in city driving. If this trend is not reversed, the overall efficiency of the United States fleet will peak and then actually begin to drop as new cars start replacing more efficient older cars.

In addition, total fuel consumption is higher because small pickup trucks, minivans and jeeps, which are less fuel efficient than cars, are increasingly marketed and sold for passenger use in lieu of autos. As the findings in S. 279 recognize, because

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[14] J. MacKenzie and M. Walsh, supra note 1, at 23.

[15] J. MacKenzie and M. Walsh, supra note 1, at 24.

light trucks have not been subject to strict CAFE standards, fuel economy of the light truck fleet has not increased in the last decade. This remarkable lack of efficiency improvements in the light truck market has left considerable room for innovation and installation of existing technology to improve fuel economy.

NEEDED IMPROVEMENTS IN S. 279: HIGHER STANDARDS AND "TRUTH IN TESTING"

While the provisions of S. 279 are praiseworthy, there is a need to strengthen the standards of this bill in two respects.

First, we support raising the required increase in average fuel economy by the model year 2001 to 60% for each manufacturer, or to approximately 45 mpg for the overall new car fleet and 35 mpg for light trucks. This further level of improvement is necessary for significant progress against global warming given the major worldwide increases in vehicles registered and vehicle miles traveled.

A second change is needed to reflect the actual changes in driving that increasingly render the original procedures for measuring fuel economy obsolete and misleading. According to a report for the Department of Energy, EPA fuel economy test results overestimate actual on-road fuel economy by as much as 15%-- and this testing gap will grow to almost 30% by the year

2010.[16] Thus, the current overall EPA-measured Corporate Average Fuel Economy (CAFE) of 28 mpg masks a real-world value of only about 24 mpg. We support a Truth-in-Testing Amendment to take account of the relevant factors that reduce actual efficiency, including the fact that highway driving speeds and the fraction of miles driven in cities are higher than assumed by EPA.

We strongly oppose any weakening amendments to S. 279, including any amendments that promote other goals by giving manufacturers credits toward CAFE standards in lieu of actual efficiency improvements. Even credits that promote desireable objectives would undermine the critically important efficiency improvements sought by the legislation.

For example, we oppose any effort to re-offer last year's amendment which would have lifted the current cap on flexible fuel vehicle credits. Indeed, this amendment did not even assure that these vehicles would actually run on anything other than gasoline. We also oppose last year's amendment which would have granted credits to manufacturers that install air bags. Automakers are finally beginning to include air bags as standard equipment, and those that do not do so voluntarily should be required to do so by legislation, but not in exchange for gas mileage credits.

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[16] F. Westbrook and P. Patterson, Changing Driving Patterns and Their Effect on Fuel Economy, presented at the 1989 SAE Government/Industry Meeting, Washington, D.C. (May 2, 1989).

The automobile companies continue to display a brazen hypocrisy on the issue of safety. As other witnesses have testified, all car and light truck models can and should be made more energy efficient, using technology that will not adversely affect safety. The same automakers who have vigorously fought mandatory air bags, and side impact, roll-over and roof-crush safety standards, falsely claim that this bill would compromise safety.

Finally, we are concerned that the Secretary of Transportation may undercut the intent of S. 279 by abusing the discretion the bill affords the Secretary to lower the fuel economy standards. This concern is strengthened by the current Secretary's strong opposition to this bill and the Reagan Administration's actions between 1986 and 1989, when the Secretary unjustifiably lowered the standard from 27.5 mpg to 26 mpg and then to 26.5 mpg.

CONCLUSION

In conclusion, we strongly support prompt enactment of S. 279 with the changes indicated above. This issue is of paramount importance in light of the critical need for action to establish a national energy policy that increases our nation's energy efficiency and reduces our reliance on fossil fuels. Decreasing our dependence on fossil fuels will slow global warming and lessen the accompanying environmental, economic and social

destruction that the exploration, extraction, transportation and consumption of fossil fuels wreak on our country and in particular on our most fragile natural areas.

Senator BRYAN. Thank you very much, Mr. Hair. Ms. Bleviss, it is nice to have you back with us again.

STATEMENT OF DEBORAH BLEVISS, EXECUTIVE DIRECTOR, INTERNATIONAL INSTITUTE FOR ENERGY CONSERVATION

Ms. BLEVISS. I want to thank you again for inviting me to testify. This is the third time, now, that I have testified in front of your committee.

And I would like to submit my testimony for the record and not summarize the points in it, but take this opportunity to try to place a little bit of a contextual element to this hearings.

I, personally, have been working on the issue of looking at post-1985 automobile fuel economy policy since 1979. So it has been a long haul for me. And I would say that perhaps the most distressing part about this effort has been the increased divisiveness that we are seeing. It has really become an us versus them mentality. And the ability to communicate or find common ground is increasingly diminishing.

I think most of us in this room, if not all of us in this room, share a desire to maintain the current quality, standard of living, et cetera, in this country. We maintain a desire to have a strong, domestic industry providing good employment opportunities. And we maintain the desire of most Americans to be able to own cars, and to be able to drive them as they see fit. That is a given. I think most of us feel those desires are quite commendable and things we want to work on.

On the other hand, we are operating in a world that is increasingly changing, and changing at a much faster rate than any of us had previously thought was possible, one that is becoming less and less able for us to control.

We are currently, we know, in yet a new oil crisis. And this is not a situation where we will be able to emerge once again, and say no more oil crises. I think we have learned this fact from the last time around, when we thought we pulled ourselves out and found ourselves right back in one again.

The fact of the matter is that the U.S. is the world's largest consumer of oil and will remain so for a good period of time. And so we will have a disproportionate impact on the world oil market. The fact is that regardless of how rosy the projections are on new production capability, our domestic production capability is declining. The rate of decline is subject to debate, but it is declining. Hence we are going to become more and more of an oil importing country. And the fact of the matter is that there a growing concern about global warming. The policies of this Administration notwithstanding, I think at some point the U.S. will join its European brethran and agree to some sort of CO2 reductions.

In such an environment, we cannot ignore that we have to make those types of conditions link up with our desire to meet transportation needs. Very clearly, fuel efficiency has to emerge front and center.

There have been comments today about an NAS study. I was part of an NAS study last year that looked at global warming options. I was on the Transportation Committee. I will come back to talk about that in a minute.

But one of the real conclusions of that NAS study—and several people from the auto industry were part of my committee—was that compared to other sectors, the transport sector, in terms of available technologies now to reduce CO2 emissions, is much more problematic—than electricity, than buildings, whatever. That means there are not any technologies out there, any fuels, that are readily available, that will be able to largely displace petroleum and bring down our CO2 emissions tomorrow, 10 years from now, 20 years from now. We have more of a problem in this sector than anywhere else.

What that means to me is that we have to link up more and more our transportation needs and our push for fuel efficiency in order to buy us timeto solve the global warming dilemma. And the same goes for our oil dependence—2/3rds of the oil used in this country is for transportation. We cannot ignore that fact. And our car and automobile use is critical to that. It makes up more than 50 percent of transportation demand.

What I fear is that we, as a country, will keep putting off these solutions and have to revisit them later on in much more drastic terms. Just to point out an example, during the last oil crisis, a proposal was put forward to outlaw all larger cars. This is a much more drastic option for the auto market than anything contemplated by this bill. At this time, this idea was fought down and never was implemented. But I dare say we will see it again. Now I think, given the choice, given the fact that we can act now, and act now aggressively enough to be able to avoid having to make tough choices in the future, the choice is clear.

Let me make one last comment, and that is on the call from most of the people in the auto industry to look at the NAS study.

I was a member of a NAS committee. And I have talked to the people who are putting together this particular committee. What they are endeavoring to do is find totally unbiased individuals in this area. Unfortunately, after 10-plus years of debate, it is virtually impossible to find such individuals.

Furthermore, one of the problems that the committee is going to have is that—as our committee had—is that we do not have unbiased source of information on what is technologically achievable. We rely on the auto industry to give us that information.

In contrast, if you look at the emissions issue, there are several independent sources of research that can provide independent information on this. So first of all, the committee is going to have somewhat flawed information.

Lacking good information, what inevitably follows is exactly what followed on the NAS committee. You end up having a division, an ideological division of the pessimists who will interpret the flawed results one way, and the optimist on the other.

Unfortunately, at least based on my experience, it is probable that the pessimists will far outnumber the optimists. And I would argue, therefore, that one should look at this study as one study of many, not the definitive study. Because no study will be definitive. We lack the ability at this point to get truly unbiased information.

And with that, I would like to commend you again because I feel that your bill is quite an elegant manifestation of trying to address the concerns of the industry, while adequately meeting national public policy needs.

[The statement follows:]

STATEMENT OF DEBORAH LYNN BLEVISS, EXECUTIVE DIRECTOR/PRESIDENT, INTERNATIONAL INSTITUTE FOR ENERGY CONSERVATION

Mr. Chairman, and Members of the Subcommittee. Thank you for the opportunity to testify before you today with regard to S. 279, as I did when you first introduced a similar version of the bill in 1989.

As I mentioned to you in my previous testimony, I appear before you with the experience of having conducted a study between 1985 and 1987 that looked at: the light vehicle fuel economy technologies now under development throughout the industrialized world, the progress being made in bringing those technologies to market, the reasons for the differential rates of progress, and the policies required to expedite the introduction of those technologies. That study was published in 1988 as a book; prophetically enough, it was entitled, "The New Oil Crisis and Fuel Economy Technologies: Preparing the Light Transportation Industry for the 1990S. " A major conclusion of that book was that the domestic automotive industry trails its competitors in developing the fuel efficient technologies for light vehicles that will be needed in the next decade; new fuel economy standards were among the many of policy recommendations given to address this problem.

THE NEED FOR IMPROVED FUEL ECONOMY

With the crisis in the Persian Gulf, the vulnerability of the U.S. dependence on imported oil has once again been highlighted. Since two-thirds of total oil use is for transportation, with well over SO percent of that going for passenger car and light truck use, improved light vehicle fuel economy clearly is a critical strategy for energy security. We learned this during the oil crises of the 1970s and unfortunately we are relearning it now.

Sadly, our options for dealing with our oil import dependence are less now than they were a decade ago, and they will be still less during the next oil crisis of the future. Oil imports now stand at about 50 percent of total demand, the highest they have ever been in percentage terms. And while we had the option to increase domestic production during the last crisis, that option has been sharply reduced this time around as well as for the future. No matter how rosy the forecasts are for future offshore oil finds, American reserves of "cheap" oil are declining dramatically. Producing our way out of an oil crisis will become less and less of an option in the future.

Added to this problem is the disproportionate petroleum power that is emerging in Arab OPEC, which sits on the largest fraction of the world's oil reserves. The last time the world encountered an oil crisis, an aggressive effort was undertaken to foster a diversified set of global oil suppliers. Unfortunately, several of those suppliers had relatively shallow reserves; the North Sea oil is a case in point. Others have seen rapidly rising oil demand internally, which has reduced their export capabilities. For example, some projections show that by the end of the decade neither Indonesia nor Mexico will remain significant oil exporters.

Under these circumstances, improving the fuel economy of light vehicles clearly can do much to control—and potentially lessen—oil import dependence. Indeed, the improved fuel economy of light vehicles realized between 1975 and 1985 contributed heavily to the reduction in our oil import dependence that was achieved during those years. Moreover, these efficiency improvements had a significant impact as well on global oil demand; between 1979 and 1983, fuel economy improvements in the American new car and light truck fleet accounted for fully 20 percent of the total oil savings achieved by the industrialized country members of the International Energy Agency.

Another critical reason to pursue improved levels of light vehicle fuel economy is to lower the global warming risk. The major greenhouse gas contributed by motor vehicles is carbon dioxide (CO2). A single tank of gasoline in a typical light vehicle produces between 250 and 400 pounds of CO2 when burned. In 1985, motor vehicles accounted for almost one-quarter of the CO2 emitted in the U.S.

Clearly an important strategy in holding the line on carbon dioxide output from the transportation sector must be improving the fuel economy of motor vehicles, over half of which are light vehicles. Doubling the fuel economy halves the CO2 output of a vehicle. Improving fuel economy looms as an ever more important strategy when one recognizes that the number of vehicles on the road in both the U.S. and the world will not remain constant. In fact, vehicle miles traveled has tended to grow at an average rate of 2.7 percent per year in this country. Higher fuel economy is required to counterbalance the increase in carbon dioxide emissions that will result from the increasing road travel in the years ahead.

COMMENTS ON S. 279

The need to improve light vehicle fuel economy is therefore clear. And S. 279 is an important step in addressing this need. I would like to compliment both the senators and their staffs on their diligence and commitment in bringing this bill forward.

The bill addresses many of the points I have addressed in previous testimony. It adopts the percentage approach, thereby equalizing the technology push on full-line and small car producers. Nevertheless, it places a ceiling on how high the average fuel economy improvement of any single manufacturer must be, thereby protecting any manufacturer that already enjoys a high average fuel economy in the vehicles offered for sale today from being pushed up against a technological limit.

Furthermore, the bill legislates percentage standards for light trucks as well, taking authority for standard-setting away from the Department of Transportation, which has too frequently been influenced by the industry to weaken the standards it proposes. This change is critical because light trucks are an ever growing portion of light vehicle sales, presently accounting for a third of such sales. Moreover, since these trucks are less efficient than cars and their lifetimes are longer, they account for a disproportionate share—fifty percent—of the oil consumed over the lifetime of light vehicles.[3]

Finally, the bill changes the annual improvement requirement, spacing the milestones by which the manufacturers must improve their fleet fuel economies. This makes more sense and is less onerous to automotive companies because fleets do not change very rapidly in their average fuel economy from one year to the next. It should be noted, however, that spacing the milestones as far apart as every five years means Congress will be placing considerable faith in the industry that it will be diligent in meeting the standards. Recognizing the game-playing by the industry with fuel economy regulations that has characterized recent years, such faith may be misplaced..

The federal government will basically get only one chance to measure how well the industry is pursuing its fuel economy requirements.

SUGGESTED IMPROVEMENTS TO S. 279

A. More Aggressive Standard

The 1996 and 2001 percentage improvement requirements set forth in this bill are based upon models developed by the Department of Energy and the Office of Technology Assessment. I have the greatest respect for the work done by these agencies. (Although I am concerned that progressive iterations of these models have resulted in a downward ratcheting of projected levels of cost effective fuel economy levels, seemingly in the face of political pressure.) Such models are important guides for evaluating what industry can do under similar market conditions as today and assuming future product plans remain static. But they should not assume such a role of importance that the "tail starts wagging the dog". Consider the following points:

1. The automotive industry rarely makes a decision to introduce a technology based upon its rate of return in fuel savings. Rather, manufacturers look at a wide range of factors including: the multiplicity of benefits that result from that technology (e.g. dent resistance of plastic body panels), product plans of competitors, consumer interest in the product, the risks associated with failure of the technology, regulatory requirements, and first costs of the product. In fact, the strategy of American policymakers to try to determine the cost effectiveness of various fuel economy levels drew puzzlement from most foreign automakers when I described the process to them as part of the study I referred to earlier; they had NEVER made such calculations. It is indeed telling that during the time I conducted the study, interest in improved fuel economy on the part of both policymakers and automobile companies was at an all-time low. Yet they were still pursuing fuel economy technologies. Why? Because they saw other benefits from introducing those technologies. They might beat out a competitor and gain market shares. They could enhance their image with car buyers of being on the cutting edge of technology. The technology offered greater durability or comfort or easier maintenance. Hence, the exercise conducted by DOE and OTA does not model very well how automakers make their decisions about which products to introduce.

2. Costs for new technologies not yet ready for production are very inexact. I found in my study that cost estimates tended to vary 200 to 300 percent, and in some cases as much as 1000 percent. In particular, the best sources for the estimated future cost of a technology is the automotive industry itself. But it is not in the interest of the industry to give a lower figure for the cost, for fear that it will make higher fuel economy standards seem more feasible. Hence, the figures provided tend to be on the high side. (On the other hand, cost figures from individual inventors tend to be on the low side.) Furthermore, once a technology is introduced and becomes widely used, its costs tend to drop as economies of scale are reached and competitors vie for market share. Hence, it is important to realize the tenuousness of estimated costs made by DOE and OTA, particularly for technologies that are several years away from commercialization.

Even considering the uncertainty associated with DOE and OTA cost numbers-and the likelihood that these estimates are on the high side—it is important to compare these costs with those of a typical car today. Figures put forward in an article by DOE researchers estimate that the costs per car in going from a standard of 27.5 miles per gallons (mpg) to an effective standard of 39.4 mpg (roughly what would be achieved in S. 279) by the year 2000 amount to $757 (in 1986 dollars).[4] This is comparable to the cost of merely adding an air conditioning option to a car. Moreover, considering that the average price of a car today is $15,000, this increase amounts to less than 5 percent of the cost of the car—not a particularly onerous burden on consumers.[5] In fact, this additional cost is within the realm of sales incentives offered by manufacturers to move their car models.

This point is important because many have argued that new fuel economy regulations will make new cars unbearably expensive. Indeed, it is instructive to note that recent analysis shows that the safety, emissions, and fuel economy regulatory requirements of recent years cannot be blamed for the run-up of new car prices. Analysis completed by the U.S. Bureau of Labor Statistics shows that if the costs of a comparable 1967 car were inflated to current dollars and the value of safety, emissions, and fuel economy requirements were added, the resulting vehicle would cost $9880 in 1988.[6] Clearly, other factors have led the car prices we see today.

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[3] Department of Energy, Periodic Energy Report, Number 2, December 1987.

[4] From a paper titled "Cost Effectiveness of Future Fuel Economy Improvements" to be published in Energy Journal.

[5] Based upon figures from the Department of Commerce, Bureau of Economic Affairs.

[6] Motor Vehicle Facts and Figures '89, p. 40.

3. Projections made by the industry as to when they could introduce a new or altered technology are always on the conservative side. Again, it is in the interest of the industry to have as weak a standard as possible; hence, it will always be conservative in judging how quicKly it can adapt to new standards.

This is not a new phenomena; we have already seen the industry react this way with regard to standards proposed in the Clean Air Act. Unfortunately, Congress had a better fallback in the latter case; it could rely on independent research conducted by the Environmental Protection Agency to judge the accuracy of industry claims. Sadly, there is no similar program with regard to fuel economy. Nevertheless, there is anecdotal evidence that suggests the industry can act more quicKly than it is claiming. For example, despite industry protests that two-stroke engines are a long ways away, we know there is a twostroke Orbital engine being roadtested in an unaltered Ford Fiesta that is achieving a 30 percent improvement in fuel economy. And we know there is a race, particularly in Europe, to get a two-stroke into market; the U.S. market-the largest in the world—is certainly not going to be insulated from this development.

4. The fuel costs used in the models make no attempt to quantify the externalities represented by increased dependence on imported oil and an enhanced peril of global warming. Indeed, it is interesting to speculate about what cost-effective fuel economy levels would be if fuel prices are comparable to those first seen after the invasion of Kuwait. The fuel economy regulations that are being proposed are being put forward because these threats are looming; if these threats were not there, there would be no reason to propose fuel economy regulations. Hence, if levels of fuel economy are going to be set based upon a cost-effectiveness criterion, the price of fuel used should include the value of these externalities.

S. The "Product Plan" approach used in the DOE and OTA models does not model very well how a technology push strategy could drive fuel economy. The DOE and OTA model approach assumes moderate changes in technologies without really changing product plans. But the purpose of fuel economy regulation should be a technology push, not only to significantly affect import dependence and the threat of global warming, but also to yield a competitive advantage. As I noted in my earlier testimony, the domestic industry lags in competitors in fuel economy R&D, much as it did in the mid-1970s when the first fuel economy regulations were passed. That first set of regulations provided a shot in the arm for the domestic industry, enabling it to better compete. But that first set of regulations did not accomplish this by marginally causing the industry to alter its product plans. A major re-evaluation of what was to be introduced in future years was undertaken.

A new set of regulations should have the same effect. If the changes will be marginal, with little benefit to oil import dependence, reducing the risk of global warming, or competitiveness, then there is little need for the regulations. We do not want manufacturers to shift their new product offerings to small, cramped cars with no acceleration, but neither do we want manufacturers to marginally tinker with current product plans. Prophesies of doom were offered with the first set of fuel economy requirements—a fear that everyone would be driving Pintos was cited. But these did not come to fruition. Instead the standard provided a technological challenge to automakers to offer consumers what they wanted but at greater levels of fuel economy.

The points just made highlight what a good fuel economy regulation law should do. It should provide a technology push on the industry. It should realize substantial benefits to the existing threats to our energy security and the security of the globe's climate. Yet, it should not set such aggressive levels as to divert capital within the domestic automotive industry away from such other important arenas to maintain its competitiveness as manufacturing technology, other technology development and new model development. In my previous testimony to you, I proposed a fuel economy standard that would seek to establish in ten years a new car fleet average of 45 mpg and a new light truck fleet average of 35 mpg as the course that would best meet all of these criteria. I continue to support these levels and recommend they be embraced in an amended S. 279.

B. Stricter Relief Options for the Secretary

Recognizing that Congress does not have 20-20 foresight, S. 279 allows the Secretary of Transportation to have some discretion with changing the standard beginning in 1996. In the world seen before the 1980s, such a policy would have been considered a wise use of discretionary power. But, unfortunately, the 1980s made a mockery of the role of the enforcing agency. The automotive industry was literally able to dictate to the U.S. government what it wanted and invariably get its requests.

While the most egregious of these excesses have now been removed, a precedent has been set that cannot be ignored. No matter how noble the original intentions of the

Congress, the Department of Transportation has not demonstrated the integrity lately to make responsible decisions in the fuel economy arena. Hence, I am rather uncomfortable with the discretion left to the Secretary in the proposed bill, especially if after the give-and-take process of passing a bill, a lower standard emerges than is currently proposed. In such a case, even with all the provisos written into the bill, the U.S. could well see a standard that accomplishes little to nothing.

It is very important not to lose sight of the goal of the bill. The proposed bill wishes to produce enough of a fuel economy gain—over and above what the market would deliver anyway—to have a substantial and significant impact on both energy security and greenhouse emissions. If this is not

accomplished, there is little reason for the bill. Hence, I would argue to hold fast to the 2001 goal, making it very difficult to alter that standard. However, greater flexibility could be applied to the 1996 goal; the latter, after all, is meant to check up on the industry's progress in meeting the 2001 goal. The Secretary, for example, might be given considerable latitude in forgiving a failure to meeting the 1996 standard if the 2001 goal is met.

C. Better Fuel Economy Test

S. 279 directs the Administrator of the Environmental Protection Agency to conduct a study on the accuracy of fuel economy testing. However, it places no requirement on the EPA that it take any corrective action to improve the accuracy of fuel economy testing. This is extremely important.

It has long been recognized that the current test used overestimates on- road fuel economy by 15 to 20 percent. The test procedure used, which is embodied in law, is old and outdated. In fact, consumers complained so bitterly about the fuel economy "shortfall" that EPA developed an arithmetic correction to the test that reduced measured urban fuel economy by 10 percent and measured highway fuel economy by 22 percent. This correction was applied to the Gas Mileage Guide and the labels that are required to be displayed on all new car models. But it was not applied to the fuel economy levels used to calculate compliance with fuel economy standards. Hence, for the purpose of policymaking, we are overestimating the impact of existing fuel economy laws.

Furthermore, in the years ahead, even the present arithmetic calculations will not model very well actual on-road fuel economy. There are three reasons for this. First, congestion in cities has reduced the average speed in urban driving conditions and increased the frequency of stop- and-go driving. This decreases the fuel efficiency of the average vehicle in urban driving conditions. Second, highway speeds have increased. Maximum speed limits on major highways have risen from 55 miles per hour to 65 miles per hour, and many drivers go faster still. The higher the highway speed, the lower the fuel efficiency of the vehicle. Hence, highway fuel economy is also being overestimated. Finally, composite fuel economy has historically been based upon a formula of 45 percent highway fuel economy and 55 percent urban fuel economy. But this proportion is also changing; the fraction of time spent driving in the urban mode has increased relative to the highway mode.

These changing conditions have led to speculation that by the beginning of the next century, the discrepancy between tested fuel economy and on- road fuel economy could be as much as 30 percent. Clearly, S. 279 needs to be amended to direct the EPA after its study is completed to revise its test procedures to reflect today's driving conditions. This is an issue of truth in advertising. Furthermore, discretion needs to be provided to the Secretary of Transportation to revise fuel economy requirements over some reasonable period of time to account for the impact these revisions will have on measured fleet fuel economy. Furthermore, S. 279 should direct EPA to review and adapt its testing procedure on a regular basis so that we are no longer hindered by an outdated procedure. I would suggest this process occur every seven to ten years. This would enable the test to be kept fairly well updated without placing an unduly onerous burden on the industry.

D. Rulemaking for Future Fuel Economy Regulations

At this point in time, we know that further improvements in light vehicle fuel economy will be needed after the turn of the century. Barring any major breakthroughs in developing a non-CO_2-producing vehicle fuel, we will need to continue to improve the fuel economy of our light vehicle fleet in order to control the threat of global warming. Furthermore, we will undoubtedly need to pursue fuel economy for energy security reasons as well.

However, at this time, it is almost impossible to assess what levels of fuel economy will be feasible in the new century. Nevertheless, we cannot afford the "down" time that would inevitably follow the termination of the proposed new set of regulations, especially if public attention at that time is turned to other issues. The example of the last five years is very telling. Public interest and attention was addressed elsewhere. As a result, fuel economy regulatory requirements were rolled backwards. And five years of benefits in terms of improving energy security and reducing the threat to global warming were lost.

S. 279 needs to avoid the problems of the previous fuel economy law and provide for a process of continuity beyond the year 2000. The proposed bill has already made an important step in this direction by directing the National Academy of Sciences to assess every five years the state of development of fuel efficient technologies for light vehicles. This was a recommendation I had made in my study. But an additional element is needed that will translate the Academy's analysis into implementation. I would suggest that the Department of Transportation be required to provide for a rulemaking procedure following receipt of the Academy's 1995 report to set standards for ten years hence. A similar requirement should be established for the year 2000.

E. Supplementary Fuel Economy Policies

Fuel economy regulations are a necessary component of any successful program to improve the efficiency of the nation's cars and light trucks. But they are not sufficient in and of themselves to address this task. They need to be supplemented by consumer incentive programs so that the market works with the manufacturers in meeting the standards. And they need to be supplemented by research programs to ensure that the necessary technologies get to market.

I realize that these programs are out of the purview of this Committee. Nevertheless I would like to briefly address them because they are necessary parts of an overall package that only in its entirety can accomplish the goals this Committee has established.

In devising consumer incentives, clearly fuel prices have to be addressed. While these prices have been on a roller coaster lately, until relatively recently they were very low, thereby giving consumers the wrong message about the importance of fuel economy. However, it is important to recognize that increasing the price of fuel will do more to discourage the purchase of inefficient vehicles than it will do to push the purchase of higher fuel efficiency vehicles. This is because as the efficiency of a car increases, the fraction of its operating costs attributable to fuel costs drops. Fuel savings are still being realized—which clearly benefits the country—but in smaller increments. Hence, the incentive to invest in more efficient cars diminishes.

Trading in the 10 mpg car of a decade ago for one that got 20 mpg effectively doubled the range of the car, an effect every car owner recognized. But trading in a 30 mpg car of today for a 40 mpg car of tomorrow only increases the car's range by one-third, a much less noticeable effect. Evidence of this "diminishing return" can be seen in both Europe and Japan where fuel prices are roughly double what is seen in the U.S. Yet, the fuel economy of new light vehicles is not significantly higher than in the U.S.

This discussion is put forward to point out the limitations of a policy espoused by some to promote fuel economy by relying solely on increased fuel prices. There are numerous good policy reasons to consider increasing fuel prices, such as discouraging the purchase of gas guzzlers and reducing unnecessary driving. But higher fuel prices, particularly considering the limited increases that would be dictated by political realities, are likely to do little in pushing higher fuel economy.

A better vehicle to encourage consumers to purchase fuel efficient cars is through a vehicle tax and rebate scheme where the revenues from the tax—which would be assessed on gas "guzzlers"—would pay for the rebate- -to be provided for gas "sippers". A gas guzzler tax presently exists in the U.S. but it has become outdated. A gas sipper rebate does not exist but was originally proposed by the Carter Administration. Former Congresswoman Claudine Schneider proposed a variant of this scheme in the global warming bill she introduced several years ago; it could serve as a model for what might be proposed today.

Finally, with regard to research and development needs, let me underscore the finding in the study I conducted that the domestic industry lags its competition in the breadth and scope of its fuel economy research. This lag needs to be remedied.

CONCLUSION

I would like to conclude by complimenting the co-sponsors of S. 279 on their insight and vision in developing the bill. Hopefully, as the bill progresses through the Senate it will be strengthened with the suggestions I have made.

Senator BRYAN. Thank you so much. Mr. Ledbetter?

STATEMENT OF MARC LEDBETTER, AMERICAN COUNCIL FOR AN ENERGY-EFFICIENT ECONOMY

Mr. LEDBETTER. Thank you, Mr. Chairman.

I am here representing the American Council for an Energy-Efficient Economy, which is a non-profit organization based in Washington that works to promote energy efficiency.

Instead of summarizing my written statement, what I would like to do is just extract a few points from it and make those real quickly in the 5-minutes that I am allowed.

Senator BRYAN. We do not want you to feel like you are in any rush. You have waited here a long time.

We will hang in there and make sure you get the full amount of time, each of you.

Mr. LEDBETTER. All right, thank you.

The first point that I would like to address is the technological feasibility and cost-effectiveness of improving fuel economy. We performed an analysis on those questions and developed some results. This analysis was based primarily on information collected by DOE's contractor, Energy and Environmental Analysis—I am sure you are quite familiar with their analysis and the information they have collected.

Looking at the technologies and their fuel-efficiency benefits that were collected by EEA, and adding some of our own technologies that we believe that EEA overlooked, we calculated that it was technologically feasible and cost

effective to achieve a level of fuel economy by the year 2000 of about 44 miles per gallon.

Now that was not an exhaustive list of technologies we looked at. There are other technologies out there that will undoubtedly play a role in improving fuel economy. But for one reason or another they were not included—such as, for example, turbo and super-charging, or two-stroke engines.

Looking at the cost of achieving that fuel economy level, we estimated that it would cost—to reach the 40 m.p.g. that is in your bill, we estimated that it would cost around $700 per car.

Now if you take that investment and you spread it over the gallons of gasolines saved by those cars over their lifetime, it works out to around .50 per gallon of gasoline saved. Which is obviously a very good deal, compared to the cost you would have to pay for new gasoline supplies in the year 2000. So we believe that it is highly cost effective from a societal point of view to move to the level of fuel economies in your legislation.

Another area that I would like to address is that of the trade-off between a vehicle's acceleration capability and its fuel economy. We have seen an enormous change in the capability of vehicles to accelerate since 1982. We have seen a lot of change in technology that has made much of that possible.

The amount of horsepower that we get out of a cubic inch of engine displacement has increased 50 percent since 1982, and much of that technological improvement has been applied to making cars much faster than they used to be.

We ran a calculation looking at the effect of that on fuel consumption. And we estimate that as a consequence of the increase in acceleration capability since 1982 for cars and light trucks, that we are now consuming an additional 240 thousand barrels of oil per day. That calculation is based on a relationship that was developed by the EPA.

Now this is not a fixed number. It is going to continue to grow, even if cars do not become any faster than they are today. Because these cars that are much faster now that are being manufactured and sold move into the fleet. As they move into the fleet and begin to dominate the fleet, we are going to consume even more oil. We estimate that by 1996 we will be consuming an additional 500 thousand barrels per day, simply as a consequence of this increased acceleration capability.

So faster cars are going to, in short order, cause us to consume an additional 500 thousand barrels of oil per day. I might point out that that 500 thousand barrels of oil per day far exceeds the estimated oil production that we hope to get out of the Arctic National Wildlife Refuge.

Another point that I would like to quickly address is that of safety versus fuel economy. It is clear that the opponents of fuel economy legislation have seized this issue as one to scare the public into believing that this is an unwise course of action, that higher fuel economy means slaughter on the highways.

It is—the analyses that have been done have greatly abused the available information. And oftentimes the analyses are based on unadjusted data, not taking into account the differences between drivers and cars, and the differences between cars that have nothing to do with fuel economy.

As an example, I would like to point out an analysis that was done by the Insurance Institute for Highway Safety, circulated in a brochure to Capitol Hill last year, in which pre-downsized cars were compared with post-downsized cars. There was a series of GM cars that were looked at in this analysis.

And without making any other adjustments in the data, the analysis concluded that since the death rate per 10 thousand registered vehicles for the post-

downsized cars were higher than the death rates for the pre-downsized cars, moving to the downsized cars had caused an increase in the fatality rates.

Making a simple adjustment in the number of miles driven per year by those cars—because you are comparing an older car with a newer car and the newer cars are driven more miles per year, making that simple adjustment in the data—you can completely turn the results on their head.

The majority of the vehicles end up with a lower death rate when you make that kind of adjustment. Now that is not to say that that kind of adjustment is the final adjustment you need to make. It simply illustrates that these kinds of comparisons have to be done carefully, and that all kinds of adjustments that adjust for differences between drivers and differences between cars must be taken into account in doing these kinds of analyses.

I see the red light is on, so I will just quickly conclude. I think without question your legislation is the singlemost important piece of legislation required to reduce oil consumption in this country. But by itself, it is not going to be sufficient. We are going to need to implement a number of policies.

And I think that it is important that we also look at policies to encourage consumers to buy more fuel-efficient cars. We have to look at gasoline taxes. We have to look at gas guzzler taxes. We have to look at giving rebates to buyers of fuel-efficient cars. We need these other kinds of policies to interact with the guidelines set out in your legislation, with the mandates set out in your legislation. So that the manufacturers will be assured of selling the cars that your legislation requires they manufacture.

Thank you.

[The statement follows:]

STATEMENT OF MARC LEDBETTER AND JOHN DECICCO AMERICAN COUNCIL FOR AN ENERGY-EFFICIENT ECONOMY

Good morning Mr. Chairman and members of the Committee. I am here representing the American Council for an Energy-Efficient Economy, a non-profit organization dedicated to advancing technologies, programs, and policies that improve energy efficiency.

Since 1976 the fuel economy of passenger cars has improved from 17 mpg to 28 mpg, and the fuel economy of light trucks has improved from 17 to 21 mpg. Had this improvement not occurred, cars and light trucks in the United States would now be consuming a additional 2.5 million barrels of oil per day and drivers would be spending at least an additional $40 billion per year for gasoline. Moreover, higher oil demand over the years would have exerted upward pressure on world oil prices, which would have markedly slowed the international economic recovery during the 1980s. The improvement in light vehicle fuel economy since the early 1970s has been nothing short of spectacular. The economic, environmental, and national security benefits of this improvement are immeasurable.

Unfortunately, much of the progress made by the United States during the 1970s and early 1980s in reducing oil imports is being rapidly undone. The net import share of U.S. oil consumption has shot up from 27% in 1985 to about 45% in 1990. These imports cost the United States about $50 billion in 1990.

The fifteen-year trend of rising light vehicle fuel economy that has held total fuel consumption by light vehicles in check has come to a halt. Low gasoline prices, rollbacks of fuel economy standards, and a cessation in the rise of the fuel economy threshold for gas guzzler taxes has taken the pressure off automobile manufacturers to improve fuel economy. New car fuel economy almost doubled from 1973 to 1988, but since 1988, new car fuel economy has decreased 3%. Light truck fuel economy peaked in 1987, but has also fallen by 3%.

Making matters worse, the number of vehicle miles traveled (VMT) in the United States continues to grow rapidly, seemingly inexorably. A plot of VMT growth since 1935 shows a very steady, rapid increase in VMT, with the two major oil crises of the 1970s represented by very small, temporary shifts in the upward trend. See Figure 1 Recent analysis of the factors driving the growth in VMT indicates that VMT should continue to grow at about 2.5% per year through the year 2000.[1]

Furthermore, the on-road fuel economy of new cars and light trucks is falling further and further behind their EPA-rated fuel economy. New vehicle on-road fuel economy is currently estimated to be 15-20% lower than the EPA rating.[2] Analysts project that because of growing urban congestion, higher highway speeds, and a larger ratio of urban to highway miles, on-road fuel economy could fall 30% below EPA ratings by the year 2010.[3]

Yet another factor contributing to increasing oil use is the growing number of light trucks in the U.S. light vehicle fleet. On average, new light trucks achieve 21 mpg, 26% below the 1988 new car average of 28.3 mpg. In 1970 they only represented 15% of new light vehicle sales, but they now represent about one third of new light vehicle sales, and their popularity is projected to increase even more.

The large majority of light trucks are being used as passenger cars. A 1987 survey by the Department of Commerce found that 73% of light trucks are used for personal transportation[4] (As defined by Commerce, personal transportation means, "operated as a personal-use vehicle in place of an automobile for pleasure driving, travel to work, etc. (no business use)." Thus, for most people, a truck serves the same purpose as a car, but achieves much lower fuel economy.

Taken together, stalled fuel economy improvements, rapidly growing VMT, increasing traffic congestion, substitution of trucks for cars, and other factors will cause oil demand to grow so rapidly that it will outstrip any other efforts to rein in oil imports. At stake are national economic health, security, and the Earth's climate. Among the many actions that can be taken to improve U.S. energy security, increasing the fuel economy of light vehicles should be a very high priority.

MARKET FORCES AND IMPROVED AUTOMOBILE FUEL ECONOMY

If market forces could fix the problems outlined above, there is little reason for congress to consider policy measures to address the issue. Unfortunately, there is good reason to believe that the market will not solve the problem.

With today's average car and fuel prices, fuel represents only about 12% of the lifecycle cost of operating a new car. Fuel economy is thus of relatively low importance in new car purchase decisions. Further increases in fuel economy will of course reduce annual fuel costs, but this reduction will be partially offset by the increased capital costs of a fuel economy improvement. For example, purchasing a 35 mpg car instead of a 30 mpg car will reduce annual fuel costs only about $50 per year. Subtracting the extra annual capital cost of the higher fuel economy car leaves little savings, roughly $25, to the buyer of the 35 mpg car. A car buyer thus has a very weak incentive to purchase a high fuel economy vehicle. This phenomena is true today's new automobile fuel economy levels and higher, even with fuel prices that are double or triple their current level. (See Figure 2.)

Other evidence that higher fuel prices won't push passenger car fuel economy into the high 30s or 40s is found in industrialized countries with gasoline prices that are two to four times higher than U.S. prices. Table I compares fuel economies and gasoline prices in selected countries. As can be seen, much higher fuel prices aren't necessarily associated with significantly higher fuel economies. (Even though Japan's 1988 price of gasoline was more than triple the U.S. price, its light vehicle fuel economy was slightly lower than our's.)

We are not arguing that higher fuel prices will not increase automobile fuel economy. They will clearly play an important role, as they have in the past, but we cannot assume that fuel prices alone are a strong enough motivator to improve fuel economy to levels that are cost effective from a societal perspective. Policy measures will be needed to improve fuel economy to these levels.

FURTHER FUEL ECONOMY IMPROVEMENTS ARE COST EFFECTIVE

Much of the current debate on fuel economy standards has focused on what levels of fuel economy are technologically feasible and cost effective. We recently wrote a paper that addressed this issue.[5]

The analysis described in the paper investigated a number of fuel economy technologies to estimate how much new car fuel economy could be improved by the year 2000, and how much of this improvement is cost-effective for the car-buying public. The list of technologies analyzed is based on the list compiled by Energy and Environmental Analysis (EEA) for the Department of Energy. Two technologies not included in EEA's were included in ours: aggressive transmission management and idle-off. All of the technologies analyzed are well- understood, and most have already been commercialized.

The analysis posed a scenario in which the technologies were rapidly adopted to the fullest extent possible. The results indicate that if average automobile size ad acceleration performance were held constant at their 1987 levels, new car fuel economy could cost- effectively be improved to 44 mpg by the year 2000, at an average cost of 53 cents per gallon of gasoline saved. (In other words, if the increase in the purchase price due to fuel economy improvements were spread over the expected gasoline savings, and discounted to present value, the cost would amount to 53 cents per gallon.) Compared to the current price of gasoline, that's a pretty good deal. The deal looks even better as gas prices rise in the coming years, as projected by the Energy Information Administration.

The list of technologies included in our analysis is not exhaustive. For example, advanced two-stroke engines are not included, nor are turbo- and super-charging. Including these and other technologies would increase the cost-effective and technically possible level of fuel economy. On the other hand, the analysis does not adjust for more stringent future emission and safety standards, nor does it account for the fact that cars are now more powerful, larger, and heavier than they were in 1987. Adjusting for new standards, and using the larger, more powerful 1990 cars as the base instead of 1987 cars would decrease the cost-effective level of fuel economy. On balance, however, including additional technologies and adjusting for the above factors would result in a higher cost-effective level of fuel economy than the 44 mpg estimate we report here.

The results of the analysis were compiled into a "supply curve of conserved energy" for the year 2000, which reveals how much energy savings could be had in the year 2000, and at what cost. By doing this, oil savings obtained through fuel economy improvements can be put in the same analytical framework used for energy production projects. As can be seen in Figure 3, increasing fuel economy to 44 mpg would save 2.1 quads (about 1 million barrels per day) by the year 2000, at a marginal cost below the projected cost of gasoline in the year 2000. Since a barrel saved is equivalent to a barrel produced, the economically rational decision for society would be to invest in improving fuel efficiency up to the point where its marginal cost equals that of the next best alternative.

FEDERAL POLICIES ARE NEEDED TO IMPROVE LIGHT VEHICLE FUEL ECONOMY

No one policy measure will be sufficient to substantially increase fuel economy. A complementary set of policies, all aimed at the same goal, is the most effective way to increase fuel economy. We recommend the following.

First and most important, higher fuel economy standards should be enacted. We fully support Senator Bryan's S. 279, and believe the fuel economy standards it proposes are reasonable, feasible, and cost- effective by a wide margin. We also believe that basing the new standards on percentage increases for each manufacturer, as the bill does, is the fairest way to allocate both the financial and technological burden of improving fuel economy among the manufacturers. The argument that percentage increases unfairly burden manufacturers with higher-than-average fuel economy is simply obfuscation.

If the fuel economy levels proposed in S. 279 were achieved, oil consumption would be 2.5 million barrels per day lower in the year 2005 than if new car fuel economy remains at today's level. In addition, consumers would save (net of fuel economy improvement costs) about $30 billion per year. (Annual oil and consumer savings will grow after 2005 as the high-mpg vehicles comprise a larger share of the total vehicle fleet.)

Second, Congress should increase the fuel economy threshold for the gas guzzler tax. Presently, only cars that fall below 22.5 mpg are subject to the tax. At whatever level future fuel economy standards are set, the gas guzzler tax threshold should be increased by the same percentage, so that a strong mechanism exists for pushing up the bottom end of the fleet. The gas guzzler tax has long been overlooked as an effective policy tool for improving fuel economy. However, there is strong evidence that the gas guzzler tax played an important role in improving fuel economy, especially between 1983 and 1986.

Figure 4 shows a plot of the average fuel economy of cars whose average fuel economy was below 21 mpg in 1980, the year before the gas guzzler tax took effect. Also plotted on the graph are the gas guzzler tax threshold and the real price of gasoline for the years 1980 through 1987. As can be seen, the fuel economy of low-mpg cars rose after the guzzler tax threshold was raised high enough to pose a tax threat. Manufacturers clearly decided it was more economic to improve fuel economy than to even pay a small gas guzzler tax. This improvement in fuel economy occurred during a period of sustained decreases in the price of gasoline. As can be seen in Figure 5, this improvement in low-mpg cars occurred when the fuel economy of the remainder of the new car fleet hardly improved, suggesting that the gas guzzler tax played a major role in post-1983 fuel economy improvements.

Gas guzzler taxes have a number of desirable features. Since the tax only applies to new cars, low-income persons will be largely unaffected by the tax. And since the tax is a large penalty imposed at the point of automobile purchase, instead of very small sums stretched out over many years (as caused by a gasoline tax), it will likely have a very strong effect on the willingness of cars buyers to seek higher mileage cars. Revenues from the tax could also be used to provide rebates to buyers of highly efficient cars. We also recommend that a gas guzzler tax

be established for light trucks, and like passenger cars, the guzzler tax threshold should be increased by the Same percentage as the light truck fuel economy standard.

The recent increase in the gas guzzler tax will have very little impact on the fuel economy of cars sold in the U.S. because the fuel economy threshold for the tax was not changed. Only the amount charged for falling below the threshold was changed, and since the threshold is presently so low that it only applies to imported luxury cars, the overwhelming majority of cars sold in the U.S. will remain unaffected by the tax change.

Finally, a higher gasoline tax should also be enacted to help push the market in the direction of higher fuel economy. As indicated earlier, a gasoline tax, even a relatively large one, will not by itself be able to push fuel economy into the 40 mpg range. But it will help create the consumer demand for fuel efficiency that will support manufacturers' efforts to improve fuel economy.

The above combination of policies would both require manufacturers to produce fuel-efficient vehicles, and encourage consumers to buy those cars. Instead of being subjected to the roller coaster of world oil prices, and weak, uneven consumer demand for fuel efficiency, manufacturers would know what minimum levels of fuel economy to plan for, and they would know that consumers would have strong incentives to buy those cars.

FUEL ECONOMY AND GLOBAL WARMING

In addition to improving the U.S. balance of trade and energy security, future light vehicle fuel economy increases could reduce the threat of global warming by reducing emissions of carbon dioxide

(CO2). Past improvements in light vehicle fuel economy have already had a significant effect on U.S. carbon dioxide emissions. Had the improvement in light vehicle fuel economy between 1976 and 1989 not occurred, carbon emissions would be 120 million metric tons higher (about 9% of current total U.S. carbon emissions). Improving light vehicle fuel economy to the levels proposed in S. 279 would reduce carbon emissions another 120 million metric tons by the year 200S.

Light vehicles are the single largest end user of fossil fuels in the United States. They are responsible for about 270 million metric tons of carbon emissions per year, more than total carbon emissions from fossil fuels in all of Africa.[6] The effect of future fuel economy improvements on global warming will of course depend on the degree of those improvements. OTA's recent report on greenhouse gas reduction concludes that among the dozens of measures considered, improvements in light vehicle fuel economy hold the most technical potential for reducing CO2 emissions by the year 201S.[7]

EPA's report to Congress on "Policy Options for Stabilizing Global Climate," estimates the effect on global warming of substantial fuel economy increases in the U.S. and world automobile fleet. EPA estimates that increasing the world's fleet fuel economy to 50 mpg by the year 2025 would reduce projected global warming by 5% in a future scenario that assumes rapid technological change and economic growth. For perspective, EPA estimates that the 5% reduction is larger than the reduction in global warming that could be achieved through a near complete phaseout of CFCs by 2003, or through a rapid development of low-cost solar technology. See Figure 6.

Improving U.S. light vehicle fuel economy is not the complete solution to the global warming problem, but among the many efforts we must undertake to slow the rate of global warming, it is one of the most important and feasible.

FUEL ECONOMY AND VEHICLE SAFETY

Opponents of efforts to improve automobile fuel economy have argued that the standards increase highway fatalities. Fuel-efficient cars are commonly equated with small, light cars. However, the record shows that fuel economy can be substantially increased without reducing vehicle weight. Average new car fuel economy began to improve sharply after 1974. Initially, much of this fuel economy improvement was due to reducing average vehicle weight. It was the easiest and cheapest way for manufacturers to improve fuel economy. Between 1980 and 1988, the average vehicle weight remained almost constant, while the fuel economy increased by over 20%. (See Figure 7.) Manufacturers were able to improve fuel economy without reducing vehicle weight by relying on technological improvements in engines, transmissions, aerodynamics ad other means.

Similarly, the record shows that vehicle fuel economy can be increased substantially without reducing vehicle size. Figure 8 shows the results of an analysis that separated the effects of size and non- size (design) changes on fuel economy.[8] As can be seen, increased market share for smaller cars only explains a small percentage of the overall fuel economy improvement since 1977. Average automobile interior space has also remained almost constant since 1978. See Figure 9.

Points in Figure 10 represent the weight and safety performance of 1984 to 1988 model year cars crash tested by the U.S. Department of Transportation's National Highway Traffic Safety Administration. These cars were crashed into a fixed barrier at 35 mph. The measure of safety performance is the driver head injury criterion (HIC), which reflects the potential for injury to a driver's brain. The higher the number, the higher the potential for injury. As shown here, there is no relationship between automobile weight and head injury criteria. In fact, there are some heavy vehicles that perform poorly (upper right portion of the figure) ad some light vehicles that perform very well (lower left portion of the figure). A plot of the passenger side HIC yields very similar results.

Crashing a car into a fixed barrier does not necessarily measure how weight affects a car's performance in a crash. Nonetheless, Figure 10 illustrates that there are large differences in the crash worthiness of automobiles, independent of weight. A 1982 study pointed out that the differences in crash performance within weight classes were greater than the differences among weight classes.[9]

There are many existing light-weight cars that perform well in crash tests. But much safer and more fuel-efficient cars are possible. The Volvo LCP 2000, a prototype high-efficiency car, was designed with both safety and fuel economy in mind. The car weighs 1500 pounds (less than half today's average new auto weight of about 3200 pounds), achieves 63 mpg in the city and 81 on the highway, and can withstand frontal and side impacts of 35 mph, and a rear impacts of 30 mph.[10] U.S. regulations require only that vehicles can withstand a frontal impact of 30 mph.

Evidence that fuel economy ad automobile safety can be improved simultaneously is also found in the statistical record established in the United States. Since 1973, the average fuel economy for all cars on the road rose from 13 mpg to 20 mpg. During the same period, traffic fatalities fell from 3.5 per 100 million vehicle miles traveled to 2.4. Safer cars and highways, increased use of seatbelts, and anti-drunk driving campaigns are widely recognized as major reasons for the improvement.

Despite the evidence that improving fuel economy ad automobile safety are compatible goals, adherents to the view that improved fuel economy means higher traffic fatalities cite studies of actual automobile crash data that demonstrate a relationship between car size and fatalities, or between car weight and fatalities. A common problem, however, with studies based on actual accident data is that it is difficult to separate the effects of driver behavior from vehicle characteristics when estimating the propensity of certain cars to be involved in fatal accidents. For example, the bad fatality record

of a few high-performance sports cars may lead one to conclude that these cars are inherently unsafe. But dangerous driving practices of people who most commonly own and drive these cars may be responsible for their bad safety record. Similarly, the worse-than-average safety record of a few small, inexpensive, and fuel-efficient cars may be due to the atypical driving behavior of people who tend to buy these cars, e.g., drivers of small cars tend to be young.

In addition to the distortion caused by driver characteristics, differences in automobile uses can distort the results of such studies. For example, consider a recent analysis in a report by the Insurance Highway Safety Institute, entitled, "Where is Safety in the Fuel Economy Debate?," which purports to demonstrate that downsizing (wheelbase reduction) results in less safe cars. The analysis is summarized in a table entitled, "Deaths Per 10,000 Registered Cars, GM Models Before and After Downsizing, 1985-89," on page two of the report. Unfortunately, the table compares apples and oranges and produces misleading results.

The table compares pre-downsized GM cars with downsized versions of the same car. The report concludes that the downsized cars are much less safe than their predownsized versions. Had the data been adjusted for differences in car uses, the analysis may have yielded substantially different results. To illustrate the importance of such adjustments, we adjusted the data in the table for one of factors that would make the comparison more fair. (See Table 2.) The cars are adjusted for the difference in how many miles they are driven each year. Actual data on the annual miles for each of these cars are not available, so the average annual miles driven, by car age, were taken from estimates developed by the U.S. Department of Transportation. Once the data in the table are adjusted for the fact that older cars are driven fewer miles, and therefore are less exposed to accidents, the results change dramatically. As can be seen in the enclosed table, seven of the eleven cars had lower death rates after they were downsized.

The adjustment made in this example is not the only adjustment that should be made. May others need be made to produce a fair comparison. This adjustment was made simply to demonstrate the importance of adjusting car types for their fatal accident exposure, before making comparisons.

It is that with careful design, cars can be both fuel efficient and safe. Nonetheless, the results of some recent studies justify a close look at the effect of car size and weight on crash performance. If new research indicates that weight is a primary cause of lower fatality rates in large vehicles, then future fuel economy improvements should be based on approaches other than weight reduction. If new research indicates that car size, such as interior volume or wheelbase, is a primary cause, then future fuel economy improvements should focus on measures that do not decrease car size. With either approach, current and future technologies provide a broad range of ways to substantially improve auto fuel economy while simultaneously improving auto safety.

INCREASING AUTOMOBILE PERFORMANCE IS REDUCING FUEL ECONOMY

Engineering improvements have led to a remarkable 50% improvement in the average horsepower per unit of engine displacement in new cars since 197S.[11] Since 1982, a large part of this technological advancement has been used to make cars more powerful and faster, instead of improving fuel economy. Average engine horsepower has gone up steadily since 1982 and average acceleration time (the time it takes to go from 0 to 60 miles per hour), has dropped from 14.4 seconds to 12.1.

Other things held equal, a reduction in acceleration time causes a decline in fuel economy. Using an EPA-developed estimate of the relationship between fuel economy and acceleration performance, we estimate that the surge toward fast cars since 1982 has decreased new car fuel economy about 10 percent.[12] Had car and light truck acceleration levels remained at 1982 levels, other things being equal, we would now be consuming 240,000 barrels per day less oil, roughly the average amount of oil that could be annually produced from the Alaska National Wildlife Refuge (assuming Department of Interior estimates of recoverable resource are correct). Even if cars and trucks don't become faster than they are today, the annual rate of additional oil consumption due to the change in acceleration since 1982 will grow to about 500,000 barrels per day by the year 1996.

CONCLUSION

Federal fuel economy policies made a major contribution toward the fuel economy improvements achieved since 197S. But because they require no further improvements, and because real gasoline prices have fallen for years, the long upward trend in fuel economy has stalled. This cessation in fuel economy improvement puts our nation's economy and security at risk. Among the options for reducing our dependence on oil imports within the next ten to twenty years, none will have greater effect than substantially improving light vehicle fuel economy. Furthermore, because large energy efficiency improvements in all sectors or our economy will be necessary to slow projected climate changes that threaten life on this planet, and because light vehicles are the single largest end user of fossil fuels, we must begin again the task of improving vehicle fuel economy. The market will be of great assistance in pushing fuel economy levels higher, but it will not be sufficient. Congress must respond by passing laws to push fuel economy to much higher levels.

Higher levels of fuel economy will not only benefit the United States directly, but given the enormous influence U.S. fuel economy policies and technologies could have on other countries, fuel economy levels in other countries would likely rise also. Thus amplified, U.S. reductions in oil

consumption could greatly reduce the likelihood and magnitude of any oil supply disruption or price rise, as well as reduce CO2 emissions.

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Table 1

A COMPARISON OF 1988 NEW CAR VEHICLE FUEL ECONOMIES AND GASOLINE PRICES

	New Vehicle Fuel Economy (Miles/Gallon)	Gasoline Price (U.S. Dollars)
United States	28.3	0.95
West Germany	30.9	2.18
France	35.8	3.04
Japan	27.3	3.47
Norway	31.8	3.09
Italy	34.1	3.90

Sources: World Resources Institute and Lawrence Berkeley Laboratory

Table 2
A COMPARISON OF ADJUSTED AND UNADJUSTED DATA

DEATHS PER 10,000 REGISTERED CARS, GM MODELS BEFORE AND AFTER DOWNSIZING, 1985-89

				IIHS RESULTS				ADJUSTED RESULTS
	Model Yr Down-sized	Death Rate Before Downsizing	Death Rate After Downsizing	Percent Change in Rate	Avg. Annual Miles, Pre-Downsized Cars (1)	Avg. Annual Miles, Down-sized Cars (1)	Adjustment Factor (2)	Adjusted Percent Change in Rate
1. B Car	1977	1.2	1.4	+17	4150	5350	.77	-8
2. C/D Car	1977	1.1	1.2	+9	4150	5350	.77	-18
3. A/G Car	1978	1.7	1.8	+6	4750	6000	.79	-18
4. E Car	1979	0.9	1.1	+22	5350	6600	.81	0
5. X Car	1980	1.9	2.2	+16	6000	6900	.87	0
6. A Car	1982	1.5	1.5	0	6900	8400	.82	-20
7. F Car	1982	2.3	3.3	+43	6900	8400	.82	+17
8. Y Car	1984	3.9	4.4	+13	7500	9400	.80	-10
9. C/D Car	1985	1.0	1.3	+30	9050	10450	.87	+10
10. B/H Car	1986	1.1	1.4	+27	9650	11200	.86	+9
11. E Car	1986	0.9	1.5	+67	9650	11200	.86	+44

NOTES:

1. Each car type compared in the table includes a mix of model years. For example, the B Cars include 1975 and 1976 model year cars in calculating the death rate before downsizing, and 1977 and 1978 model year cars in the calculations for the death rate after downsizing. Since the relative proportions of the different model years is not known, the above estimates of annual miles driven for each car assume that half of the pre-downsized B cars are 1977 models, and half are 1978 models. All estimates of average annual miles driven, for each car type are calculated similarly.

2. The adjustment factor is the ratio of "Avg. Annual Miles, Pre-Downsized Cars" over "Avg. Annual Miles, Post-Downsized Cars." The factor adjusts for the higher accident exposure in newer (downsized) cars relative to older (pre-downsized) cars. The newer cars have higher accident exposure because, on average, they are driven more miles per year than the older cars they replace. The factor is multiplied by the values in the column labeled, "Death Rate After Downsizing," to produce an adjusted death rate after downsizing. This adjusted death rate is then compared with the death rate before downsizing to produce the "Adjusted Percent Change in Rate" in the last column.

Figure 1

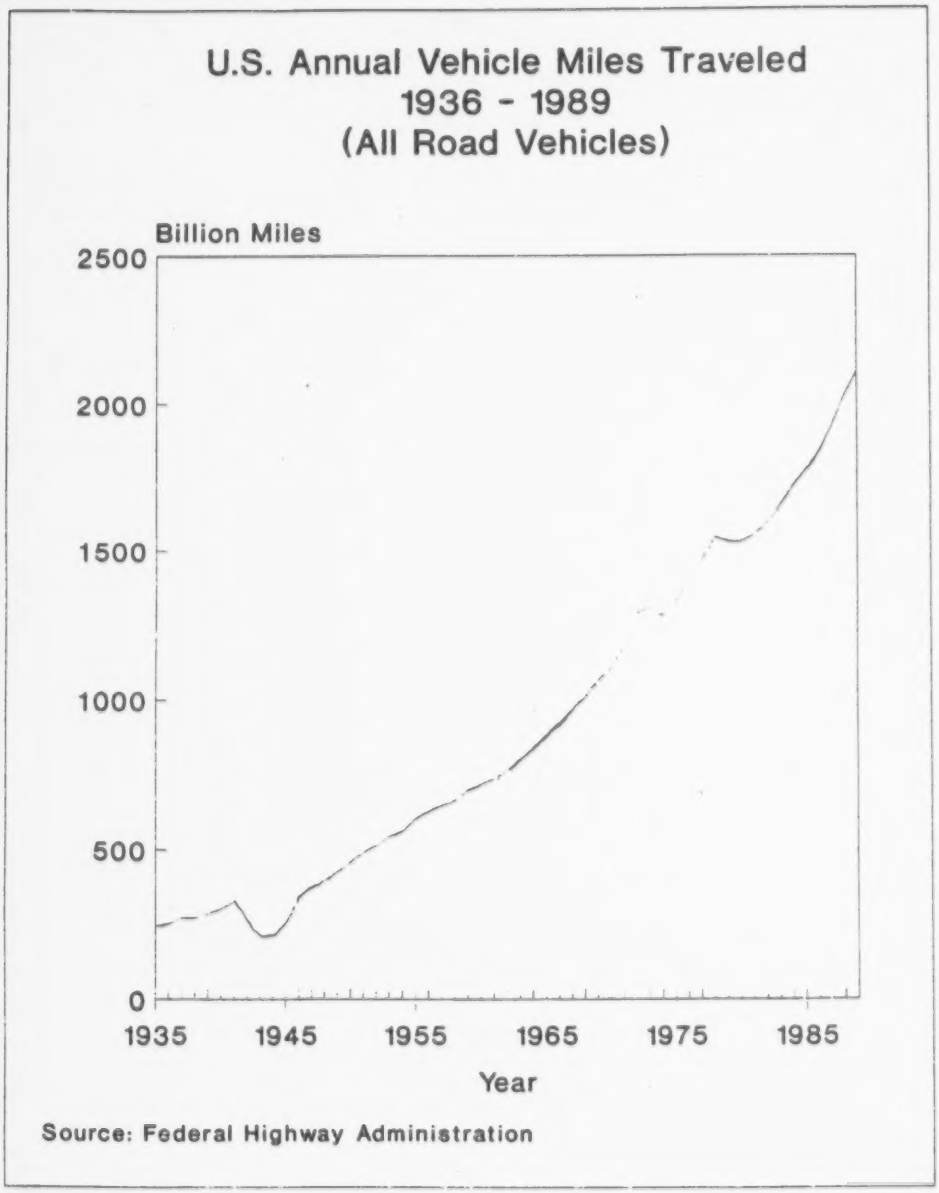
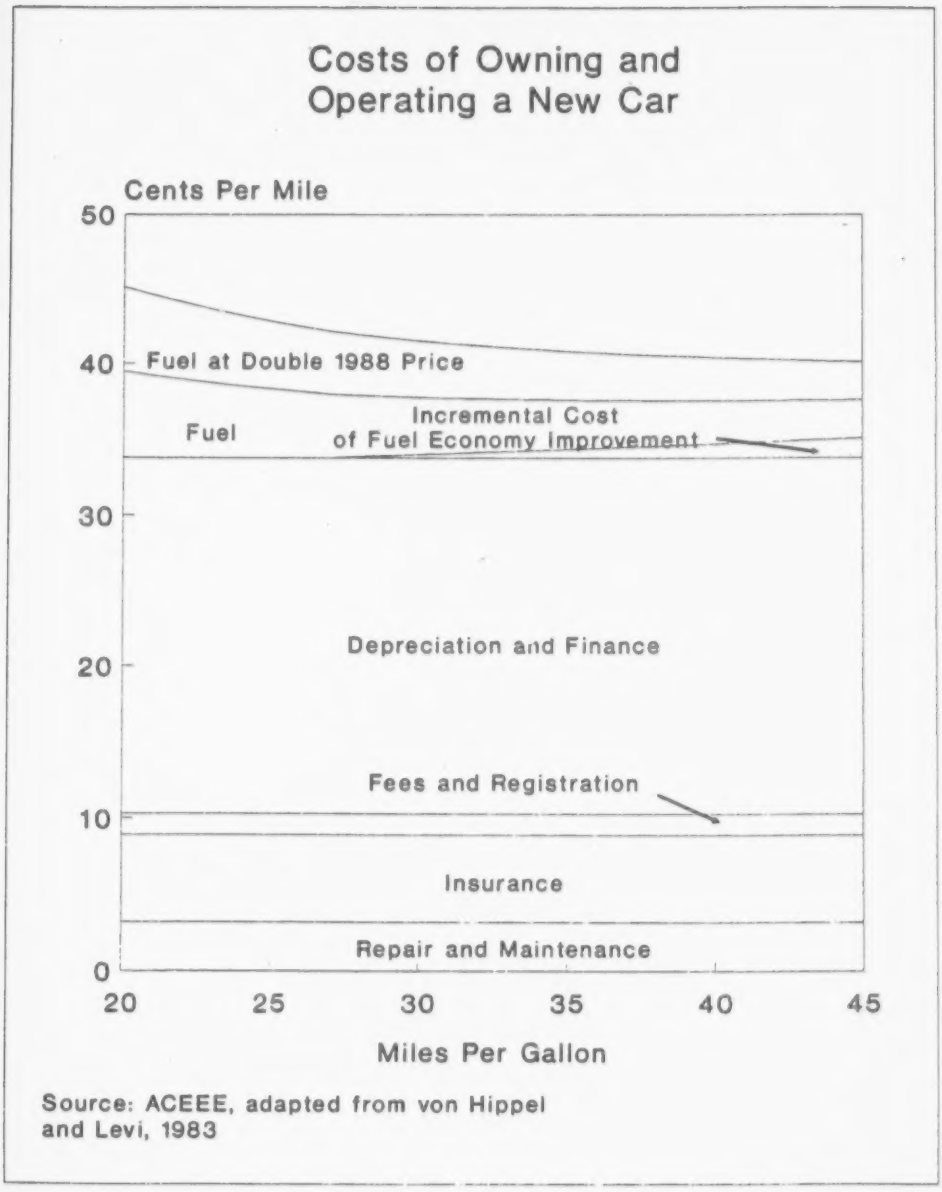

U.S. Annual Vehicle Miles Traveled
1936 - 1989
(All Road Vehicles)
Billion Miles
2500
2000
1500
1000
500
0
1935
1945
1955
1965
1975
1985
Year
Source: Federal Highway Administration

Figure 2



Source: ACEEE, adapted from von Hippel and Levi, 1983

Figure 3

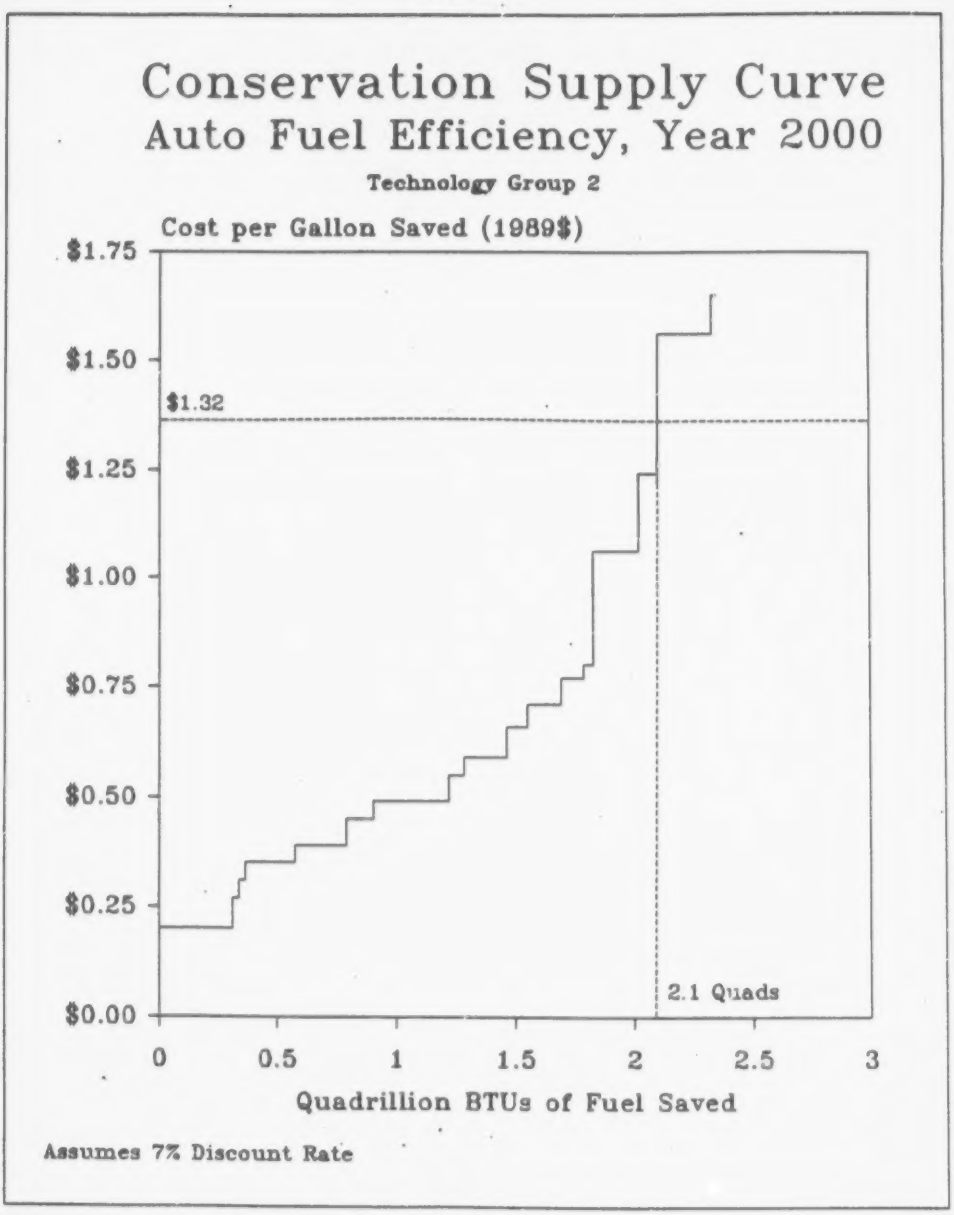
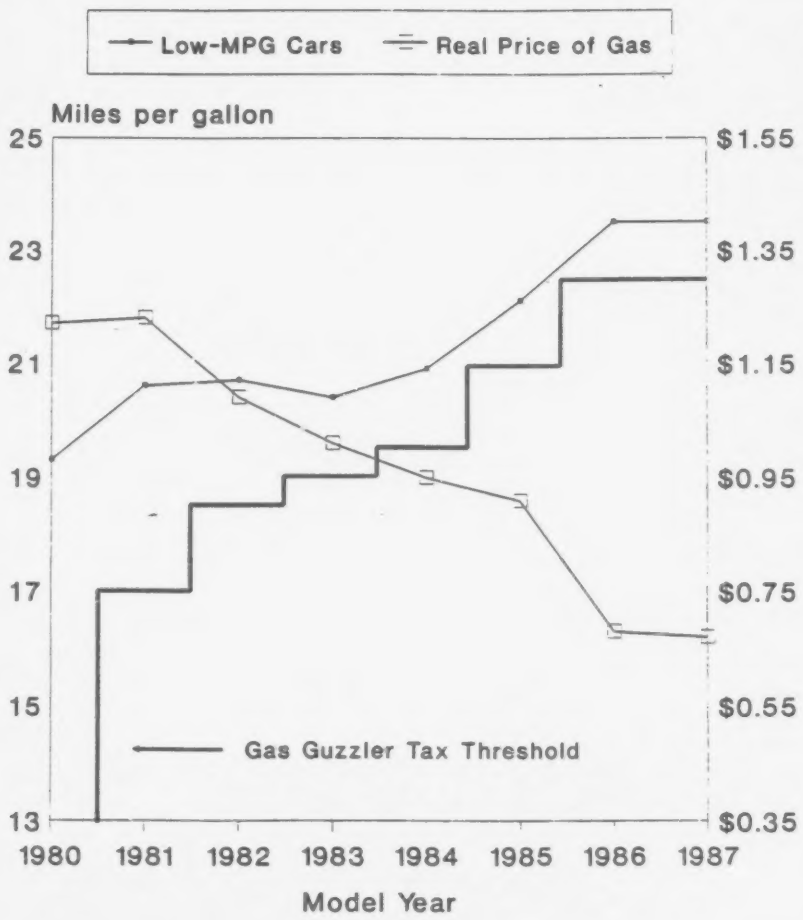

Conservation Supply Curve
Auto Fuel Efficiency, Year 2000
Technology Group 2
Cost per Gallon Saved (1989$)
$1.75
$1.50
$1.32
$1.25
$1.00
$0.75
$0.50
$0.25
$0.00
2.1 Quads
0
0.5
1
1.5
2
2.5
3
Quadrillion BTUs of Fuel Saved
Assumes 7% Discount Rate

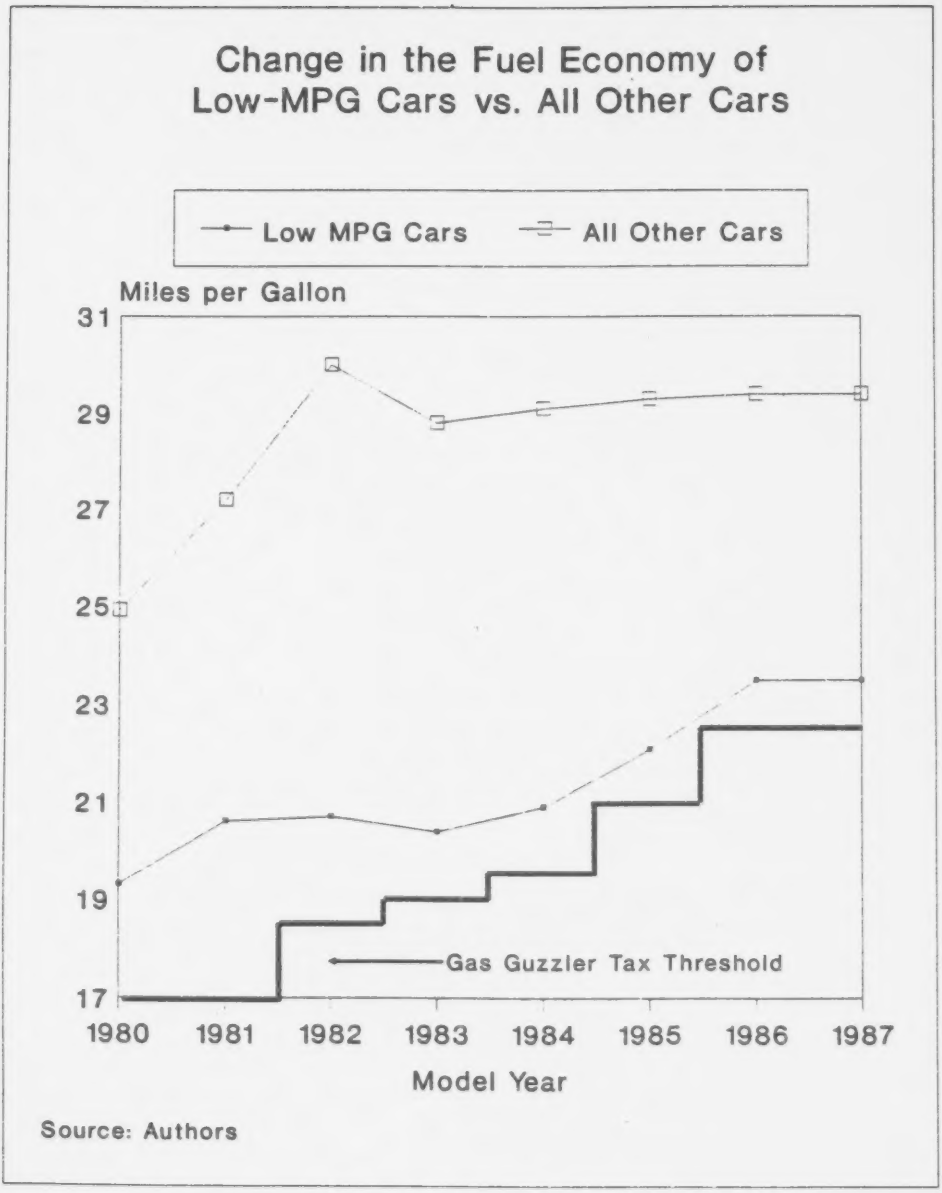
Figure 4

Change in the Fuel Economy of Low MPG Cars and the Gas Guzzler Tax



Source: Authors

Figure 5



Source: Authors

Figure 6

Many Individual Measures, Each Having A Modest Impact on Greenhouse Gas Emissions, Can Have a Dramatic Impact on the Rate of Climatic Change When Combined

Relative Effectiveness of Different Policy Strategies

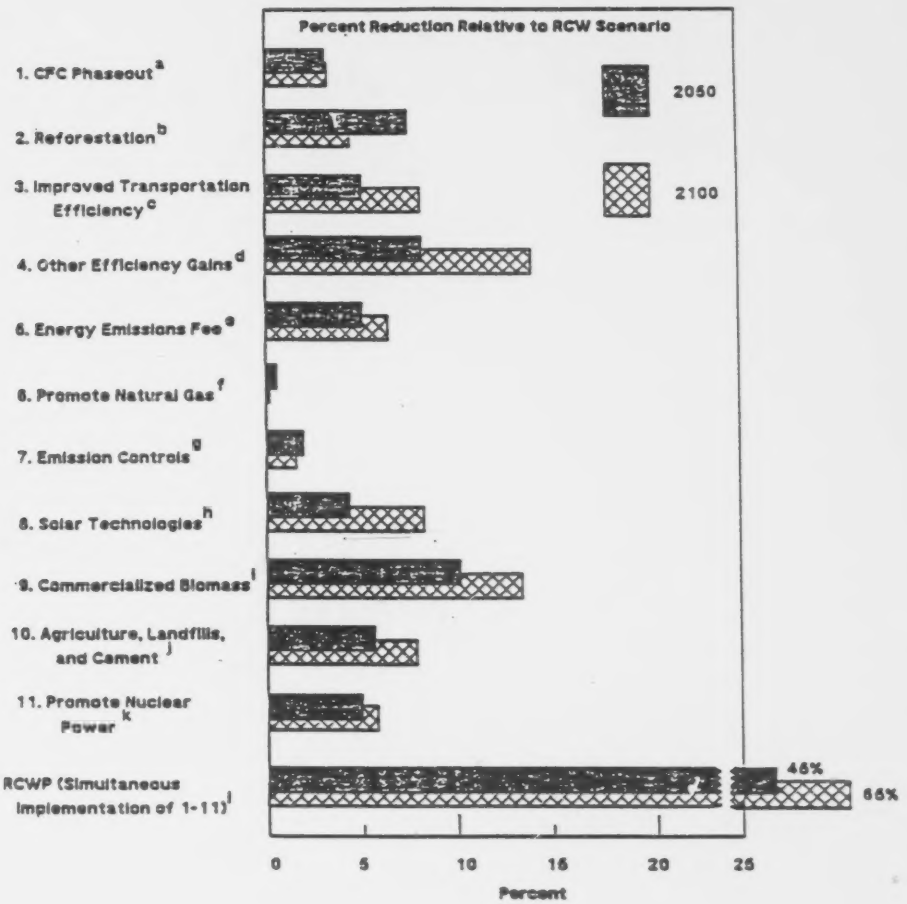
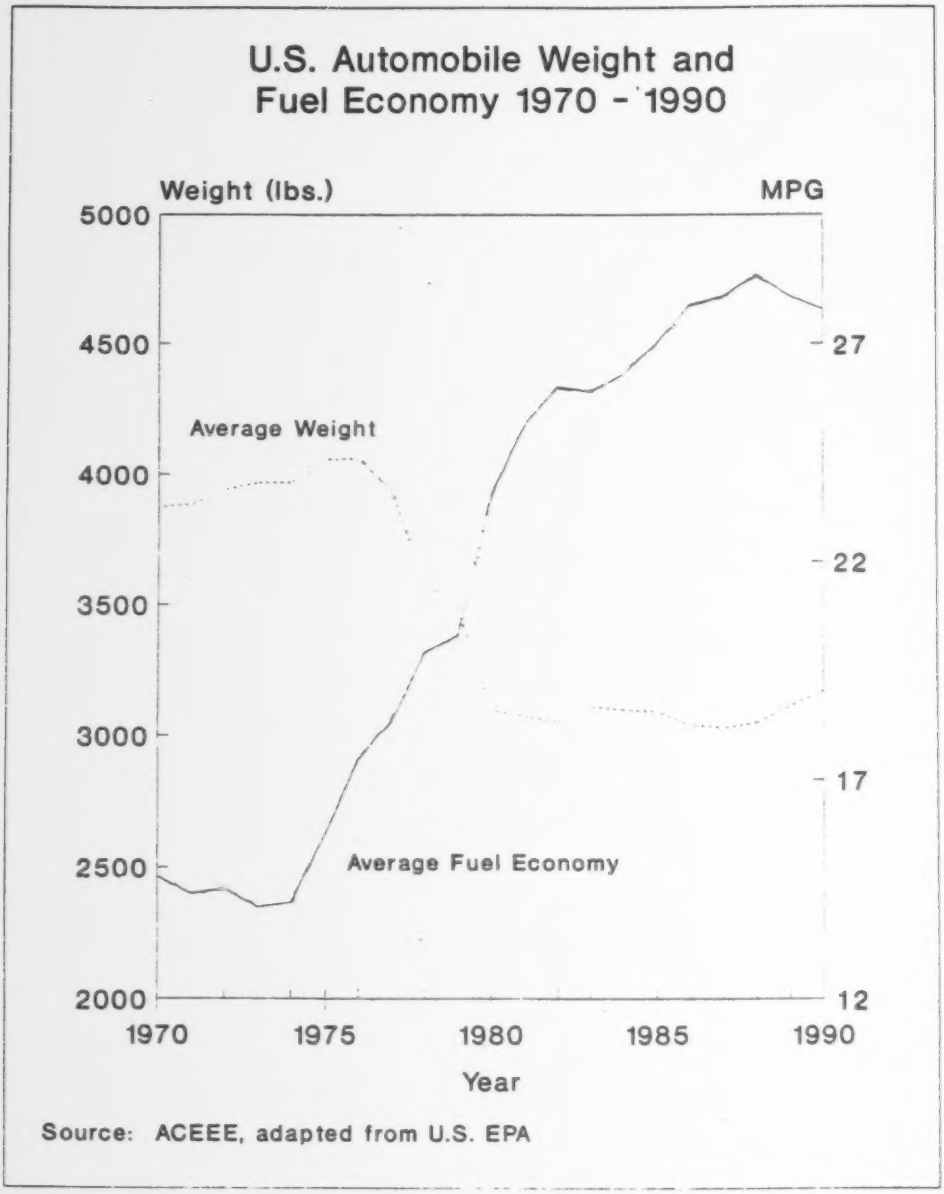


Figure 7



Source: ACEEE, adapted from U.S. EPA

Figure 8

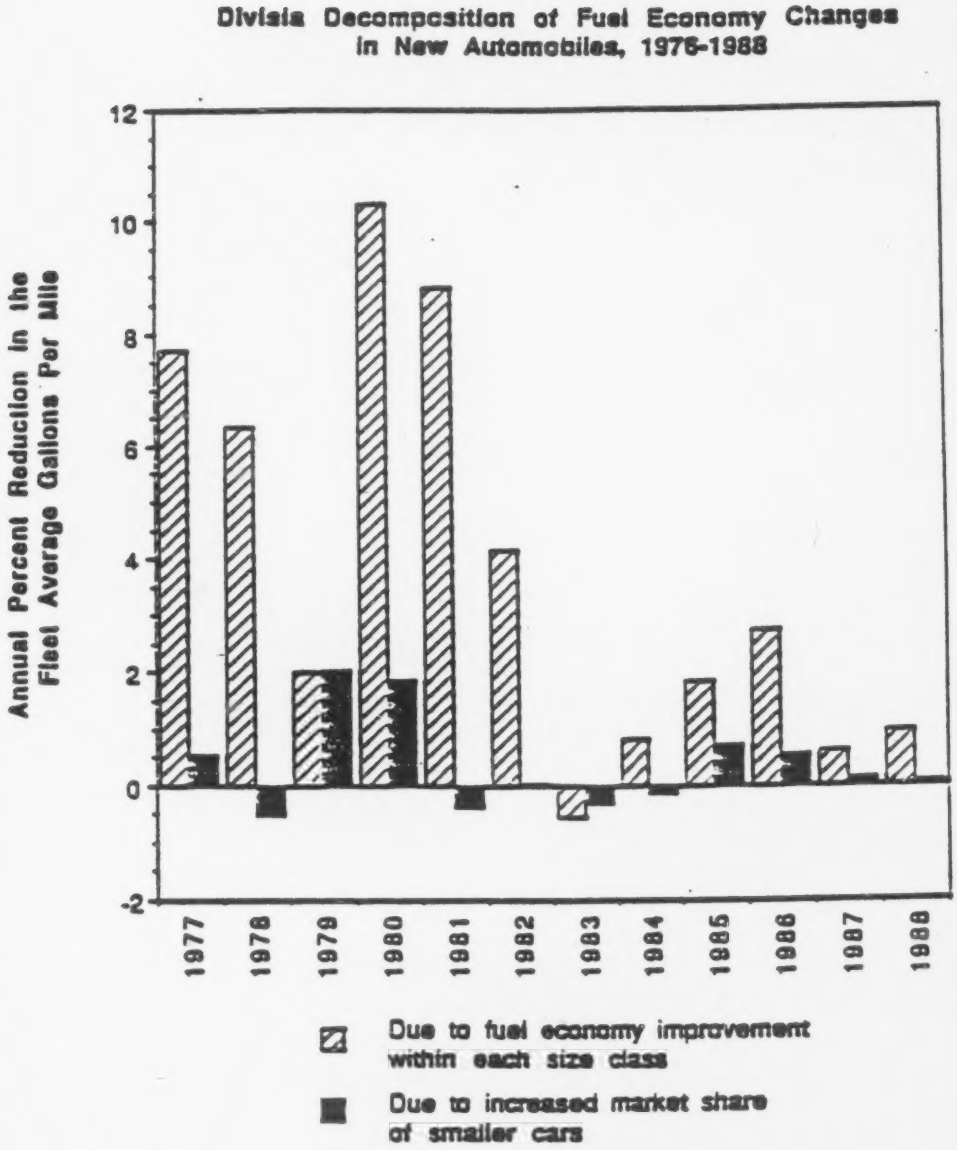
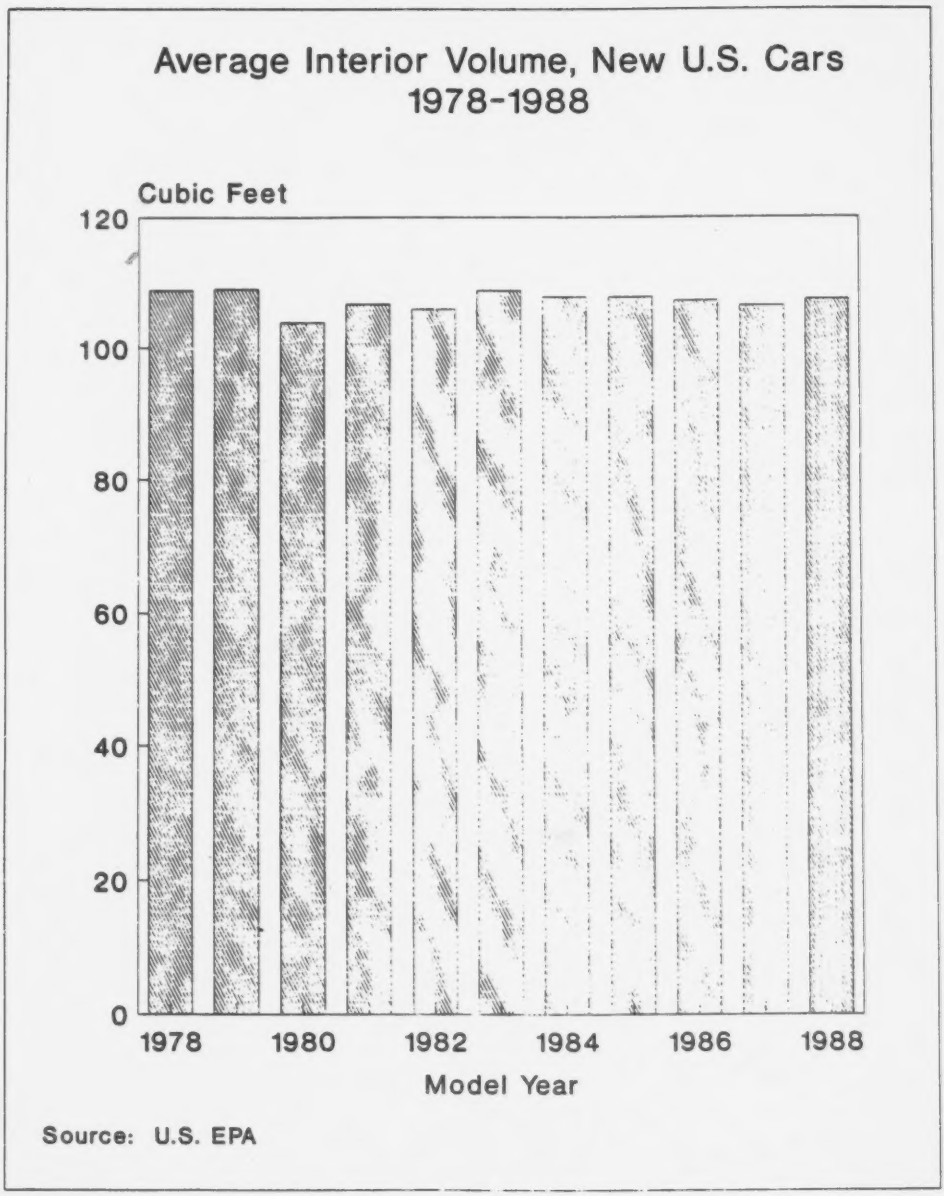

Divisia Decomposition of Fuel Economy Changes in New Automobiles, 1976-1988
Annual Percent Reduction in the Fleet Average Gallons Per Mile
12
10
8
6
4
2
0
-2
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
Due to fuel economy improvement within each size class
Due to increased market share of smaller cars

Figure 9


Average Interior Volume, New U.S. Cars
1978-1988
Cubic Feet
120
100
80
60
40
20
0
1978
1980
1982
1984
1986
1988
Model Year
Source: U.S. EPA

Auto Weight vs. Driver
Head Injury Criterion

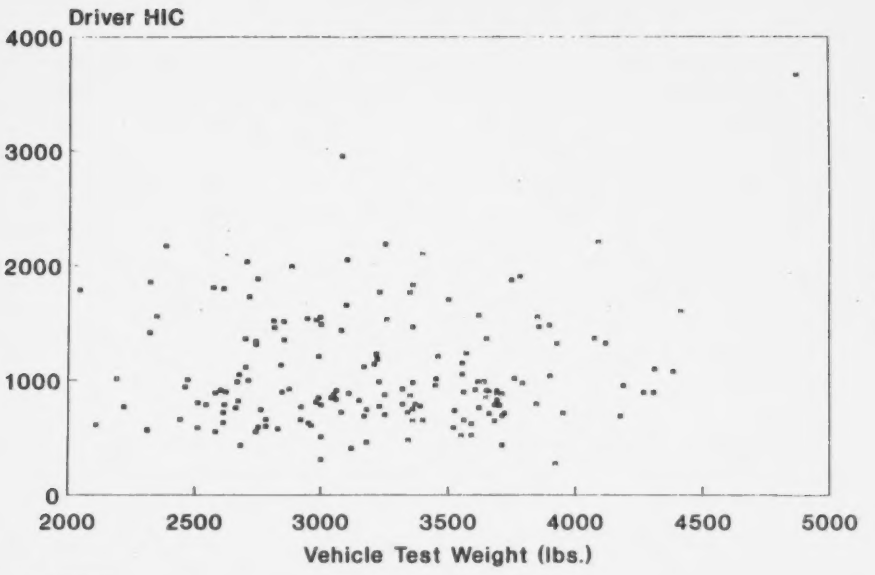


Figure 10

Source: ACEEE

Senator BRYAN. Thank you very much, Mr. Ledbetter. Mr. Warden, I appreciate your testimony. It is essentially the same that Mr. Bieber offered last year. You were here and you heard the representatives of the automotive industry. I frankly felt like I was a dentist trying to extract information as to what could or could not be achieved.

It is very difficult for this committee, which wants to act responsibly and wants to hear what the industry believes it can do within the constraints that are likely to occur in the next decade, to interact. We got from a couple that we thought 4 percent, and somebody else said 9 percent or 10 percent based upon a certain year, out year.

I would simply urge you, and Mr. Reuther, you deal daily in a whole wide variety of issues in the auto industry. It seems to me unreasonable for the industry to say, we cannot do this; stop, do not pass "go," and then ask what you can do, and to get the rather vague, unspecific, and frankly very unhelpful responses that you get in terms of what, from their perspective, underscore their perspective, is reasonable.

And you and I have talked about that, and I am sure Mr. Reuher and I will have a number of talks. I would hope that maybe you could help us to communicate that, because we are interested in hearing from them and to build a record that develops responsible public policy.

Mr. WARDEN. We understand, Mr. Chairman, and I wish we were in a position to throw out a number and say we were convinced that this was the right number. We have had that conversation, too. And I guess, you know, we have looked at the various studies just as you have, and we have looked at the information that is available from the industry. We do not have the kind of in-house expertise through which we can develop those numbers ourselves.

And that is one of the reasons, in spite of the imperfections that Deborah referred to, we are looking forward to seeing how this NAS study unfolds and what its recommendations are.

In addition to that, Mr. Chairman, it is my understanding that this NAS study is going to be somewhat broader than some of the other studies that we have seen. In other words, taking into consideration some other factors. We would like to see the factor of employment implications considered in making recommendations on this matter, for reasons that are I think fairly obvious, since this suggestion comes from a UAW representative.

But frequently I think these recommendations are made based on maximum feasible technology without regard to some of the human factors involved. And that is what we would like to see.

And as I said before, Mr. Chairman, we are not opposed to an increase in the CAFE standards. We have supported those standards; we think that law has been good for the country. We think it is good public policy, but we just do not know what the right number is. I wish we did.

Senator BRYAN. And I do understand that, Mr. Warden. Ms. Bleviss, your comment about the study being another study in a series of studies which all of us are familiar with I thought was particularly noteworthy.

In looking at the parameters of the study, I had a number of concerns because one of the assumptions built into it that you accept as a beginning predicate or premise the 1990 model year, with all of the size implications.

As you are very well aware, within the last 2 years we have seen a substantial change in the configuration of the automotive fleet, with the increases in horsepower, which are, for the Japanese fleet, primarily increases of about 22 percent in that time period; the increased weight, the decline of fuel efficiency.

We have also seen to a lesser extent that occurs in the domestic fleet, which seems to say that we ought to accept that as a starting premise, that right and virtue and truth and justice ought to accept those numbers.

Have you had a chance to look at those parameters? And have you offered any comment in terms of what parameters ought to be modified or what other aspects ought to be looked at as we approach this?

Ms. BLEVISS. I have not been invited to comment by the people at the National Academy. I think you are quite right, that your assessment is exactly one of the problems with the study. In fact, if you look at anybody's forecast 10 years ago as to what the market would look like today, there is no way that they could have accurately predicted it.

Ten years ago, the auto makers were coming to the Hill and saying that they were going to beat the standard at the time, the 1985 standard, which was 27.5 miles per gallon. And some were predicting that they were going to go as high as 30. Now that was based upon consumer buying preferences at that time, which were emphasizing fuel economy, and really were not emphasizing power.

So I think there is a problem when you start out with a very fixed premisefor the NAS study, that we are going to keep the same size mix and the same power considerations forever simplybecause consumer tastes change. And again, that is why I have always argued for a range of options to be looked at, because we cannot fix one particular point in time in the future.

Senator BRYAN. I suppose it follows from that that one could get very different conclusions, all based upon the same technological analysis. If you accept the size of the horsepower, the size of the vehicle in the 1990 fleet, and extrapolate from that where one might get from the existing technology—even if everybody on the committee agrees as to what that technology is. As opposed to beginning that extrapolation from the 1988 fleet.

Ms. BLEVISS. Absolutely, that is right.

Senator BRYAN. And that we are not talking now about difference of technology, that one analysis would involve a more exaggerated or optimistic assess-

ment. You would be using the same identical technology assessment, but get a markedly different conclusion in terms of where you could get on the CAFE average. Would that be a fair——

Ms. BLEVISS. Yeah, I think that is a fair assessment.

Senator BRYAN. Mr. Ledbetter, I was interested in what your group has done. We are debating another issue, which is not for this committee. But you had a chart in here that I found somewhat intriguing and I am going to ask you to explain it.

You know, part of the argument is by some that this CAFE approach is flawed, we ought not to be really that much concerned about fuel efficiency, that increased production is necessary. I must say that I do not rule out, you know, increased production as an abstract principal that we ought not to look to some areas.

But the area that has been most controversial has been the proposal to open up the ANWR, the Arctic refuge. And I see here a chart that was prepared that, with the CAFE standard that we are talking about, the numbers that have been assigned would be, what, 2.5 million barrels is what we have contended that we could save in this legislation by the year 200S. And the ANWR daily production rate would be 290,000 barrels. That is a little more than a tenth, but not too much more.

Can you develop for us how those numbers were arrived at?

Mr. LEDBETTER. Sure, sure. We took the Department of Interior estimates that were available on the size of the resource in the Arctic National Wildlife Refuge and in offshore California, and assumed a typical 30-year field life for those resources, and averaged the oil production over that entire period to come up with the numbers for the ANWR and for the OSC in there.

And then the calculations for the fuel economy standards were assuming roughly 2.5 percent growth in vehicle miles of travel from now until the year 2000, and roughly 2 percent per year after that time. And the, the calculation for the fuel economy standards is the savings compared to a scenario in which fuel economy does not rise above today's level.

And of course, that might not be right. It is extremely difficult to project where new car fuel economy levels will go in the future. But given the recent history where we saw new car fuel economy levels declining, and given that most government projections show modest increases in gasoline prices after the year 2000, we thought it was a reasonable assumption for that kind of analysis to assume frozen new car fuel economy out to the year 2000.

Senator BRYAN. So it would be proper to conclude, then, based upon a Department of Interior analysis initially. And of course, we do not know with absolute certainty what the reserves will be.

Mr. LEDBETTER. Right.

Senator BRYAN. But you are talking about 290,000 barrels a day versus a savings of 2.5 million barrels, the latter being permanent, the 2.5 million barrels. The 290,000 barrels is obviously for a finite time period——

Mr. LEDBETTER. Correct.

Senator BRYAN. ——whether it is 30 years, or 40 years, or 28 years.

Mr. LEDBETTER. Correct. As a matter of fact, the savings from the improved fuel economy will grow after the year 200S. 2005 was used simply because it matches a year often cited in debates about global warming. That is a date that is often used as a goal for reducing CO2 emissions. The savings will continue to grow after that time.

I think what you are pointing out is that we are not seeing the forest for the trees here. There is an extremely important option that is being completely

overlooked by the administration in looking at options for reducing oil consumption in this country. They are focusing on production. And those production resources that they are focusing on, as you can see, are small in comparison to the resource that is available through improved fuel efficiency.

Senator BRYAN. Mr. Hair, you are the president of the National Wildlife Federation. Last year, the auto industry generated a campaign focused to some extent on America's sportsmen.

I will not say that was the exclusive target, but in that campaign, sportsmen were told that, this piece of legislation, or its predecessor, S. 1224, would in effect deprive sportsmen of their right to have off-road vehicles, the four-wheel drives, the kind of thing that a lot of people out in our part of the country enjoy for hunting, for recreation, other purposes.

Yet you are in the vanguard in advocating this. Why do you not share with me the perspective as you see it of sportsmen and the interests that they have in this legislation? Are those fears misplaced that the auto industry tried to engender last year?

Mr. HAIR. Well, I think they are exactly that. They are fears that the auto industry tried to engender and to conjure up support for what I think is an ill-conceived position. The National Wildlife Federation has about S. 6 million members, about a million of those are very active sportsmen. But they are active from a point of view that they are concerned about conservation. They are concerned about maintaining and protecting the habitat where the wild resources that they want to enjoy either from a consumptive, from an aesthetic, or whatever point of view, can in fact be enjoyed.

I have heard in no discussion in my many contacts with American sporting groups around the country any concern expressed whatsoever that increased CAFE standards would somehow be a detriment to Americans enjoying the out-of-doors. In fact, I think it is quite the contrary.

Americans believe that if we are going to maintain this natural heritage, we have to first and foremost protect it. And one of the things that I am hearing more and more as a very strong message is "why do we not have a greater efficiency in the automobiles that we drive to work, or the automobiles that we use for recreation?"

So I think from the conservation-minded sportsmen and other outdoor enthusiasts, there is very, very strong support for your legislation.

Senator BRYAN. Mr. Warden, just a final question on the part of your membership. How many UAW members, if you happen to know, have been called up for the Persian Gulf? Do you have that?

Mr. WARDEN. I just do not have that figure, no. There are a fair number, a lot of working people, and working people's children involved in the Desert Storm effort.

Senator BRYAN. You have always been a very, very responsible union and I know that you would not hesitate or be reluctant to inform your membership, as has been pointed out in the colloquy of a number of the members of the panel, that there is a price that we pay for this dependency.

And it certainly makes us more dependent, not less so, in terms of defining what our geopolitical interests are, so long as we continue to remain as dependent as we are on imported oil. That obviously is a major factor in defining American foreign policy interests.

And I speak as one who supported the President's request for the UN resolution authorization. But no one could quarrel, it strikes me, with the proposition that oil plays a big part, not the only part, of our decision to define critical, essential American interests in that part of the world.

Mr. WARDEN. We certainly agree with that.

Senator BRYAN. Well, let me thank each of you for not only your testimony but your patience and endurance as well. We will keep the committee record open because other members of the panel may want to question you as well. Thank you, as always, for your attendance. And this subcommittee stands adjourned.

[Whereupon, at 1:00 p.m., the subcommittee adjourned.]

ADDITIONAL ARTICLES, LETTERS, AND STATEMENTS

STATEMENT OF HON. DAN GLICKMAN, U.S. REPRESENTATIVE FROM KANSAS

Mr. Chairman, Thank you for giving me the opportunity to testify this morning on increased automobile fuel efficiency through increases in corporate average fuel economy (CAFE) standards. I applaud your legislation, and after studying the bill and the dramatic effects it would have on U.S. consumption of foreign oil, I introduced similar legislation in the House of Representatives.

The world is at war in part, because of our dependence on petroleum from the Persian Gulf states. Saddam Hussein threatened to single-handedly disrupt the world economy by controlling the oilfields of Kuwait, Iraq and Saudi Arabia. This legislation is imperative to ensure a safe environment and national security.

The United States cannot leave itself so vulnerable again. We must address now the crisis in the Persian Gulf and this country's failure to respond to our growing dependence on foreign oil. The Department of Energy estimates our dependence will only continue to grow.

The imposition of CAFE standards and the response of automobile manufacturers to meet those standards more than doubled the fuel economy for passenger cars since 197S. Nonetheless, passenger cars and light trucks still account for 40 percent of United States oil consumption. We must address the enormous use of oil in the transportation sector of the economy. Improving the fuel efficiency of the cars and trucks we drive is the most reasonable and least complicated thing we can do as a nation to wean ourselves off our unprecedented consumption of foreign oil.

New CAFE legislation will build on improvements in fuel efficiency and will further our goal of U.S. energy security. My own legislation, H.R. 612, requires each automobile manufacturer to increase CAFE standards by 25% in 1996 and by 50% in 2001. If implemented, the United States would save about 780,000 barrels of oil per day and American drivers would save close to $40 million dollars per day in gasoline costs.

We must evaluate the costs of improving automobile fuel efficiency in light of the millions of soldiers now stationed in the Persian Gulf. The savings of nearly 3 million barrels of oil per day would more than offset the amount of oil imported into the United States each day from the Persian Gulf.

According to a recent poll sponsored by the Alliance to Save Energy and the Union of Concerned Scientists, eighty-four percent of the respondents support increasing federal fuel economy standards to 40 mpg by the year 2000. Thus far, it appears the American people possess the vision for our energy future the Bush Administration lacks, as was shown the President's National Energy Strategy released yesterday, which does nothing to address the issue of fuel efficiency. With the support of the American people and your leadership and support, I am confident we can make meaningful progress on, this problem this Congress.

STATEMENT OF HON. BOB McEWEN, U.S. REPRESENTATIVE FROM OHIO

MR. CHAIRMAN, THANK YOU FOR HOLDING THIS HEARING AND ALLOWING ME TO TESTIFY BEFORE THE SUBCOMMITTEE REGARDING THE IMPLICATIONS OF INCREASED AUTOMOBILE FUEL EFFICIENCY. I ANTICIPATE THAT OTHER WITNESSES TODAY WILL BRING UP THE ISSUES OF WHETHER OR NOT INCREASED FUEL ECONOMY WILL REALLY REDUCE FUEL CONSUMPTION, WHETHER OR NOT INCREASED FUEL ECONOMY IS TECHNICALLY POSSIBLE, WHETHER OR NOT INCREASED FUEL ECONOMY WOULD REDUCE COMPETITION AND CONSUMER CHOICE, AND WHETHER OR NOT CAFE WOULD LEAD TO A REDUCTION IN AUTO JOBS AVAILABLE TO AMERICAN WORKERS.

THESE ARE ALL VERY IMPORTANT ISSUES, BUT THE ISSUE I AM MOST CONCERNED WITH IS HIGHWAY SAFETY. UNFORTUNATELY, SAFETY IS ONE ASPECT OF THE CAFE DEBATE THAT IS FREQUENTLY IGNORED. IN FACT, THE WORD "SAFETY" DOES NOT APPEAR EVEN ONCE IN S.279, DESPITE THE FACT THAT THE BILL WILL HAVE EXTRAORDINARY IMPACT ON THE FUTURE DESIGN OF AUTOMOBILES IN THE UNITED STATES, THEREFORE DICTATING SAFETY STANDARDS.

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I SINCERELY BELIEVE THAT THE RESULT OF A MANDATED INCREASE IN FUEL ECONOMY STANDARDS WILL LEAD TO FURTHER DOWNSIZING OF AUTOMOBILES. AND IT IS A FACT THAT SMALLER AUTOMOBILES OFFER LESS PROTECTION FOR THE DRIVER AND PASSENGER. THEREFORE, INCREASED FUEL ECONOMY STANDARDS WILL HAVE THE EFFECT OF MAKING OUR HIGHWAYS LESS SAFE. SIMPLE PHYSICS TELL US THAT THE SMALLER THE CAR, THE LESS PROTECTION IS OFFERED TO THE OCCUPANT IN THE EVENT OF AN ACCIDENT. IN FACT, THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION CONTINUES TO RELEASE STUDIES SUPPORTING WHAT COMMON SENSE HAS TOLD US ALONG - - SMALL CARS ARE LESS SAFE.

IN MY TESTIMONY THIS MORNING, I WOULD SIMPLY DIRECT THE SUBCOMMITTEE'S ATTENTION TO FIVE FACTS:

(1) OVERALL, THE DEATH RATE IN THE SMALLEST CARS ON THE ROAD IS MORE THAN DOUBLE THE RATE IN THE LARGEST CARS. FOR EVERY 10,000 REGISTERED CARS ONE- TO THREE-YEARS-OLD IN 1989, 3.0 DEATHS OCCURRED IN THE SMALLEST CARS ON THE ROAD, COMPARED WITH 1.3 IN THE LARGEST CARS. THE RISK OF DEATH IS MORE THAN TWICE AS HIGH IN SMALL CARS — A SOBERING FACT FOR DRIVERS EVERYWHERE, AND FOR FAMILIES IN PARTICULAR. THESE ARE THE FACTS AS REPORTED BY THE INSURANCE INSTITUTE FOR HIGHWAY SAFETY.

(2) "IN ROLLOVER CRASHES. .. CAR SIZE HAS A MAJOR EFFECT ON FATALITY RISK... THE 1970-82 CAR SIZE CHANGES IS AN INCREASE OF APPROXIMATELY 1,340 ADDITIONAL ROLLOVER FATALITIES PER YEAR IN THE UNITED STATES". THIS IS AMONG THE FINDINGS OF A NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION STUDY.

(3) OF THE 11 GENERAL MOTORS CAR TYPES DOWNSIZED SINCE 1977, 10 OF THEM HAVE HAD HIGHER OCCUPANT DEATH RATES. THE AVERAGE INCREASE IN DEATHS, ON AVERAGE, FOR THOSE MODELS WAS 23~. IN FACT, THE RANGE OF INCREASES WAS FROM SIX PERCENT TO 67 PERCENT, ACCORDING TO THE INSURANCE INSTITUTE FOR HIGHWAY SAFETY. AND THE ONE MODEL WHICH DID NOT EXPERIENCE AN INCREASE SIMPLY HAD THE SAME DEATH RATE; NOT ONE MODEL DECREASED IN DEATH RATE AFTER DOWNSIZING.

(4) "THE 500-POUND OR 14 PERCENT REDUCTION IN THE AVERAGE WEIGHT OF 1989 CARS CAUSED BY CAFE IS ASSOCIATED WITH A 14-27 PERCENT INCREASE IN OCCUPANT FATALITY RISK." THAT IS THE FINDING OF A 1988 STUDY BY ROBERT W. CRANDALL OF THE BROOKINGS INSTITUTION AND JOHN D. GRAHAM OF THE HARVARD SCHOOL OF PUBLIC HEALTH.

(5) "CAFE WILL ALSO BE RESPONSIBLE FOR AN ADDITIONAL 11,000-19,500 SERIOUS NONFATAL INJURIES TO OCCUPANTS OF.. .1989 MODEL CARS." THIS ALSO IS A FINDING OF THE CRANDALL/GRAHAM STUDY OF THE IMPACT OF CAFE ON AUTO SAFETY.

THERE IS NO DOUBT, MR. CHAIRMAN, THAT WE NEED TO BE MORE ENERGY CONSCIOUS FOR ENVIRONMENTAL REASONS AND IN ORDER TO REDUCE OUR DEPENDENCE ON FOREIGN ENERGY SOURCES. BUT TO SACRIFICE HUMAN LIVES IN PURSUIT OF STRINGENT FUEL ECONOMY STANDARDS IS UNWARRANTED AND UNWISE. THE GALLONS OF GAS SAVED SIMPLY ARE NOT WORTH THE COST WE WILL PAY IN LIVES.

WE CAN ONLY PURSUE FUEL EFFICIENCY POLICIES THAT ARE SAFE FOR FAMILIES AND CHILDREN. NEW CAFE MANDATES TODAY WOULD INEVITABLY LEAD TO MORE HIGHWAY FATALITIES — FATALITIES WE CAN AVOID.

I FIND IT IRONIC THAT THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION, WHOSE MANDATE IS TO REDUCE ACCIDENTS AND FATALITIES, IS RESPONSIBLE FOR IMPLEMENTING FUEL ECONOMY STANDARDS WHICH SERIOUSLY ERODE OUR EFFORTS TO MAKE CARS AND ROADS MORE SAFE. AND IT IS INSTRUCTIVE THAT MR. CURRY, ADMINISTRATOR FOR NHTSA, IS HERE TO TESTIFY IN OPPOSITION TO THE INCREASED STANDARDS. I HOPE THE SUBCOMMITTEE WILL GIVE MORE ATTENTION TO THE SAFETY IMPLICATIONS OF INCREASING FUEL ECONOMY STANDARDS — IT WOULD BE A FATAL MISTAKE.

STATEMENT OF VOLKSWAGEN OF AMERICA, INC.

Volkswagen of America, Inc. (VWoA), the authorized importer of Volkswagen and Audi automobiles, with headquarters in Troy, Michigan, respectfully submits the following comment for the record on S. 279, the Motor Vehicle Fuel Efficiency Act. We request that this statement be included in the hearing record on S. 279.

While VWoA supports the goal of S. 279, namely to conserve fuel, we are opposed to the legislation for three principle reasons:

(1) the concept of different standards for different manufacturers is unfair and if adopted as proposed would disadvantage VWoA in the U.S. marketplace;

(2) the technology to achieve 20 and 40 percent CAFE increases cited by the supporters of S. 279 is not available for Volkswagen and Audi products because that technology has already been incorporated to optimize fuel economy; and

(3) the role of consumer demands in the marketplace is not addressed, when in fact it is this element which has the greatest impact on bringing fuel efficient automobiles into the hands of the buying public.

In addition, we would like to draw attention to the possible impact of a United States-Mexico Free Trade Agreement on the definition of "import" and "domestic" manufacturers embodied in the CAFE law, and urge that this Agreement not competitively disadvantage any manufacturer affected by that Agreement in terms of import or domestic status for CAFE purposes.

1. The "Percent Increase" Concept of Different Standards for Different Manufacturers is Unfair.

The concept of manufacturer-specific "percent increase" fuel economy standards is a punitive measure that would disadvantage VWoA in the marketplace.

A 20 percent increase from VWoA's 1988 model year CAFE level would set a standard for the company of 36.6 mpg while corresponding standards for the U.S. domestic manufacturers would be significantly lower, in the 32 to 34 mpg range. The "percent increase" concept would thus manipulate the marketplace by allowing the U.S. domestic manufacturers to compete in the market mainstream, protected by fuel economy legislation, while VWoA would be forced into a niche of high-mileage downsized cars only.

The U.S. domestic car manufacturers have made significant gains in improving their CAFE levels over the past fifteen years. To now adopt a scheme whereby future CAFE standards for domestic manufacturers would be less demanding than higher requirements imposed on VWoA discriminates against our company, the one that made millions of Americans conscious of good fuel economy in the 1950s and 1960s.

The "percent increase" concept is out of place in the U.S. legislative process, which has treated every manufacturer equally in the past.

2. The Technology to Achieve a 20 Percent CAFE Increase Is Not Available for VWoA's Products.

Much of the debate surrounding legislation to increase manufacturers' CAFE centers on whether or not technology is available to make additional significant fuel economy gains. The debate is narrowed even further by proponents who maintain that significant gains can still be made without further size and weight reduction (downsizing).

The basic menu of technological measures purported to be available to manufacturers for fuel economy gains was developed by the Office of Technology Assessment (OTA) in 1988 and has been refined over the years. Few would dispute that adoption of technology measures listed by OTA would result in fuel economy improvement.

For Volkswagen and Audi, the technology measures on the OTA menu are not available inasmuch as they have already been adopted, some features as long ago as 1969. 'Consequently, a fuel economy gain of 20 percent based on applying the OTA technology list is out of the question for Volkswagen and Audi models. Let us review these technology measures and their application to the VWoA passenger car product line:

Front Wheel Drive

Front wheel drive is the technology cited by OTA that gives the highest single fuel economy gain (10 percent), yet that option is not available because all Volkswagen and Audi models already have front wheel drive, and have had since 1981. Many Volkswagen and Audi models incorporated front wheel drive long before 1981, going back to 1969 when Audi cars were introduced into the U.S.

Reduced Aerodynamic Drag

All Volkswagen and Audi models have Cds at or below 0.36, except for two older models. Volkswagen's newest model, the Passat, has a Cd of 0.31, among the lowest of any production car. Volkswagen AG was one of the first manufacturers to have its own full-scale wind tunnel, in operation before the first energy crisis in 1975, which is used as an integral part of the design process to minimize aerodynamic drag.

Four-speed Automatic Transmission/Lock-up Torque Converters

Fifty percent of the Volkswagen and Audi models with automatic transmissions are of the four-speed type with lock-up torque converter feature.

Five-speed Manual Transmissions

All Volkswagen and Audi models with manual transmissions are of the five-speed type, except for one entry level model. Five-speed manual transmissions have been available within the VWoA product line since 1980.

Overhead Cam Valve Operation

All Volkswagen and Audi models have, and have had since 1981, engines with overhead cam valve operation. The VW Rabbit, and its successor, the VW Golf, have had overhead cam engines since 197S.

Multi-point Fuel Injection

All Volkswagen and Audi models have, and have had since the late 1970s, engines with multi-point fuel injection. VWoA was the first company to offer multi-point fuel injection in widespread production, beginning in 1968.

Four-valve Cylinder Engines

Four-valve per cylinder engines are principally high-rpm power enhancers, rather than fuel economy improvers, and are offered in the higher-performance Volkswagen and Audi models. The theory that a two-valve per cylinder engine of certain displacement can be replaced by a four-valve per cylinder engine of lesser displacement is in itself misleading; low-rpm torque characteristics are more important for comparing the fuel economy of engines rather than maximum horsepower characteristics.

3. The Role of Consumer Demand for Fuel Efficient Cars Is Not Addressed.

It has been VWoA's experience in the U.S. market that when there is consumer demand for more fuel efficient vehicles, our CAFE has increased remarkedly. Our experience also shows that the opposite is true as well.

Figure 1 is a plot of VWoA's CAFE over the years since 197S. The CAFE standards are also plotted for reference. This figure clearly shows the effect that consumer demand for high mileage cars — caused by the energy crunch in 1979-1981 — had on the VWoA CAFE level. From 28.6 mpg in 1979, the VWoA CAFE jumped to 3S. 2 mpg in 1981. The figure also clearly shows the drop in CAFE, to 29.1 mpg in 1984, when consumer demand for fuel efficient cars waned after the energy crunch. This is clear evidence that market demands affect CAFE levels and that if CAFE is to be dramatically increased, the way to do this is through fuel pricing, for example, rather than legislative mandate.

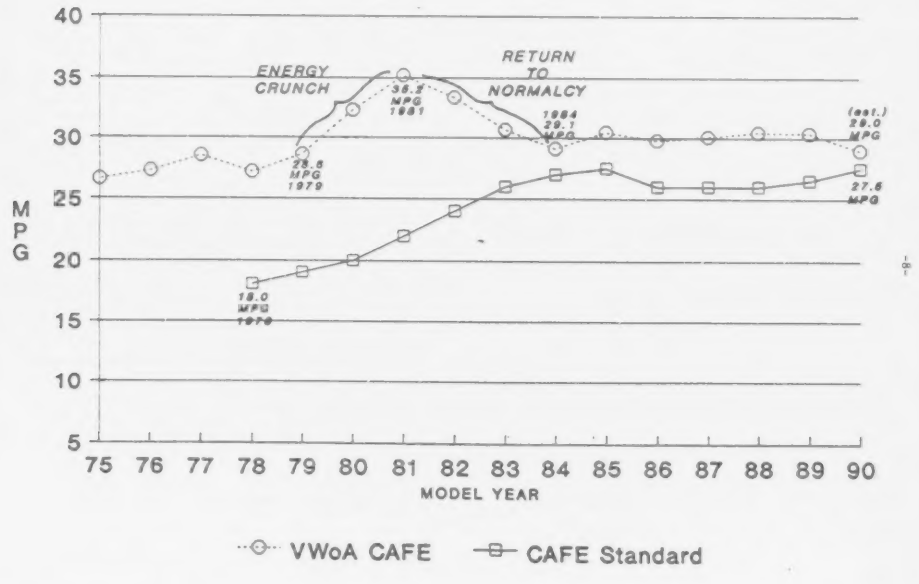
It is important to note that in VWoA's case, the CAFE was increased during the energy crunch because consumers were willing to trade off performance and comfort attributes for higher fuel economy. During this period eager buyers snapped up Volkswagen diesel cars to achieve high mileage at the expense of acceleration performance and comfort level.

Legislation that attemPts to reduce vehicular fuel consumption and increase manufacturers' CAFE levels should recognize the importance of bringing market forces into play to achieve the desired results.

4. A United States-Mexico Free Trade Agreement Should Not Adversely Affect a Manufacturer's CAFE Category.

The current CAFE statute establishes and defines two categories for passenger automobiles, relating to whether an automobile is domestically manufactured or imported (15 U.S.C. 2003 [b]). This provision of the statute also stipulates that automobiles manufactured in Canada effectively be treated the same as those manufactured in the U.S. for the category of domestically- manufactured automobiles.

VWoA CAFE 1975-1990 Figure 1.



One of the issues that could arise in any negotiations on a U.S.-Mexico Free Trade Agreement (FTA) is the CAFE treatment of automobiles produced in Mexico and imported to the U.S. Several possible scenarios can be envisioned for this treatment, bearing in mind the precedent already set by the CAFE law provision affecting certain automobiles produced in Canada, coupled with the initiative to expand any U.S.-Mexico FTA to include Canada.

VWoA believes that any U.S.-Mexico FTA provisions affecting a manufacturer's CAFE category status should be crafted so as not to competitively disadvantage that manufacturer's current position in the marketplace. In other words, any U.S.-Mexico FTA should be neutral in its influence on the CAFE statute.

Conclusion

VWoA appreciates the opportunity to offer comments on S. 279. Thank you for considering our views.

STATEMENT OF THE ASSOCIATION OF INTERNATIONAL AUTOMOBILE MANUFACTURERS, INC.

The Association of International Automobile Manufacturers ("AIAM")7 is a trade association whose members distribute passenger cars and light trucks in the United States that are manufactured both here and abroad. The Association represents 21 companies which employ thousands of Americans in their distribution, transportation and manufacturing operations. The international automobile industry, including dealers, suppliers, port and assembly plant workers and others in the United States provides jobs to more than 300,000 Americans.

When discussing how to "fix" CAFE, it is important to remember the context of the adoption of the Energy Policy and Conservation Act (EPCA). It was enacted in 1974, at a time when the automobile industry in this country was dominated by the "Big 3" domestic manufacturers. EPCA was essentially intended to force these manufacturers to double the mileage of the fleet. It was not anti-competitive for those companies, since they all had similar positions in the marketplace. The imported vehicles in the market were generally not constrained by the requirements at that time.

However, the marketplace has changed substantially since 1974. Motor vehicle companies other than the big three now play a much larger role in the market.

While expanding their product lines, the multi-line auto makers have implemented advanced technology to maintain a level above the standard. The limited-line manufacturers — even with advanced technology — are now constrained by the CAFE standards because their narrow market niches preclude them from benefiting from the averaging inherent in CAFE.

In its current form, it penalizes the limited-line manufacturers who are meeting a legitimate market demand. The price of meeting this demand through 1991 has been payment of penalties of about $212 million, from manufacturers that represent only about three percent of the market.

On the other hand, If the percentage improvement approach suggested in S. 279 were adopted, it would penalize those manufacturers that have exceeded the current standard. This is simply bad public policy. Under a percentage improvement approach, the government would be compelled to discriminate among companies by using CAFE requirements which would favor one competitor over another. It would penalize those who have done the best job of meeting the standard.

If Congress decides not to embrace a broad-based carbon fee which would be the best and most cost-effective program to reduce energy consumption, then at least, any fuel economy requirement put forth should be as fair and equitable 3 to all manufacturers as possible. It should not penalize limited-line manufacturers who cannot average across a broad product line. It should not penalize those manufacturers which have achieved the best levels and exceeded the standard. It should not penalize consumers who have varying needs for vehicles, such as those who may wish to carpool or perceive greater safety in larger vehicles. Regrettably, S. 279 does not meet these tests.

Any changes to the CAFE standards, or to the structure of the CAFE program, should be addressed in the context of a comprehensive national energy strategy. While the fuel efficiency of vehicles certainly plays a role in the nation's energy consumption pattern, it is by no means the sole or dominant factor. Conservation in all areas of energy use needs to be promoted as well as enhanced energy production and alternative sources of energy. Accordingly, it is precipitous to consider S. 279 in a vacuum; motor vehicle fuel economy should and can only be properly assessed as a part of such a larger effort.

The Department of Transportation and the National Highway Traffic Safety Administration have contracted with the National Academy of Sciences (NAS) to assess the potential for increased fuel efficiency in motor vehicles. The study is a broad one. Phase 1 will evaluate, projected over the next decade, a number of essential criteria, including technology developments, customer demand, the 4 economic ability of the motor vehicle industry to fund the required research and development to produce vehicles that are more fuel economic, as well as other important factors. As a consequence, AIAM is Optimistic that the results of the NAS work will be sound and will provide valuable information to the debate on what can be done with regard to improved fuel efficiency and by when.

There are fundamental and frequent errors, false assumptions, and irrelevancies in the findings of the bill which highlight the defects of S. 279.

Finding Number 1

Improved efficiency in the consumption of petroleum is vitally Important, not only because the worldwide supply is finite, but because the increasing dependence of the United States on foreign oil is a threat to our national security and adversely affects the trade balance.

The logic is fallacious. There simply is no direct cause and effect relationship between the amount of petroleum consumed and the country of origin of the petroleum purchased. To illustrate this point, the ratio of imported oil to the total amount of oil consumed in the U.S. has grown in the last ten years despite the fact that motor vehicles have become more fuel economic and there has been enhanced energy efficiency exhibited by other products and users.

Dependence on foreign oil is directly related to the cost of foreign oil compared to the cost of producing domestic oil. If the market price is low, the share of cheaper foreign oil increases because a low price is a disincentive for U.S. domestic production.

Finding Number 5

The United States, with only 5 percent of the world's population, is responsible for 20 percent of world carbon dioxide emissions. United States carbon dioxide emissions from gasoline alone are greater than the carbon dioxide emissions from all sources in each of the following countries and areas of the world: Latin America, Japan, the Middle East, West Germany, South and Southeast Asia, the United Kingdom, Africa, and France.

A far more relevant analysis than the share of United States carbon dioxide emissions today would be the projected U.S. share in the timeframe contained in S. 279. If that more meaningful analysis is conducted, i.e., for the years 2001 and later, when S. 279 would become fully implemented, then U.S. carbon dioxide emissions play a fa. lesser role in total global climate change gases than today. Indeed, if the present growth patterns of developing countries, particularly China, India and Brazil, continue, after the year 2000 their combined share of world- wide carbon dioxide emissions may well surpass the U.S. share, unless dramatic changes in the rate and efficiency of their use of carbon fuels is achieved.

Finding Number 6

The transportation sector is responsible for 31 percent of carbon dioxide emissions in the United States. Each gallon of gasoline burned results in the emission of 19.7 pounds of carbon dioxide.

While the numbers may be correct, they are of little relevance. The significance of the carbon dioxide emissions for the U.S. transportation sector in the years 2000 and later diminishes in importance for a number of reasons. The potential for growth in vehicle miles traveled is limited in the United States due in large part to the massive congestion experienced in dense metropolitan areas where most travel occurs. Equally important is the growth of the transportation sector and the vehicle population outside of the United States, particularly in eastern Europe and in developing countries. Hence, focusing solely on the U.S. transportation sector ignores a significant part of the problem.

Finding Number 8

Increased numbers of vehicles and vehicle miles traveled in the United States will necessitate a 3 percent annual increase in fuel efficiency merely to hold future carbon dioxide emissions at current levels. Therefore, substantial improvements in vehicle fuel efficiency will be needed to reduce these emissions.

Three erroneous assumptions underlie this finding. First, the assumption with respect to increased numbers of vehicles and the miles traveled is of questionable validity.

Second, it is mistaken to assume that an increase in fuel efficiency by itself will offset any given level of carbon dioxide emissions arising from increased numbers of vehicles or increased number of vehicle miles traveled.

And, third, the finding naively assumes that all other factors including the price of fuel and the extent of use of fuel will remain the same.

Finding Number 11

Vehicles such as small pickup trucks, vans, and jeeps were an insignificant part of the passenger vehicle market when CUE standards were enacted in 1975, and have not been subjected to strict, legislatively-established, CAFE standards. As a result, there have been few major technological changes related to the fuel efficiency of such vehicles since 1982. The fleet fuel economy for these vehicles has not increased in the last decade, and fuel economy of some of these vehicles has actually declined between 1982 and 1986. They have become increasingly popular for passenger us, and such vehIcles now account for approximately on-third of new passenger vehicle sales.

The increase in the sales of vans and light trucks over the last decade is in part related to a decrease in the utility of passenger cars as a consequence of the downsizing that took place to meet CAFE requirements. Nevertheless, contrary to the assertions in this finding, the fuel economy of these vehicles has increased in the last five years. But there are great constraints upon the potential to improve fuel efficiency for these vehicles due to the essential requirement that they carry a large number of passengers or have a load carrying capability necessary to perform certain work related tasks.

Finding Number 12

The Office of Technology Assessment and the Department of Energy agree that increased fuel efficiency is possible utilizing currently available technology and without significant changes in the size mix or performance of the fleet.

While the Office of Technology Assessment and the Department of Energy agree that increased fuel efficiency is possible, neither has agreed that the increases in fuel efficiency called for in S. 279 are possible without significant changes in vehicle size and performance capabilities. Indeed, both have explicitly stated that the projected requirements in S. 279 would require a radical change in the size and performance of the fleet and at a substantial cost.

Finding Number 13

With appropriate lead time, by utilizing technology currently in production, passenger car fleet fuel economy of between 33 and 45 miles per gallon has been estimated by various experts to be feasible without significant changes in vehicle size or performance. When technology currently in development becomes available, even higher levels of fuel economy are possible.

Contrary to the claim that the projected increases of S. 279 are "feasible without significant changes in vehicle size or performance," no recognized automotive expert in or out of government has endorsed that claim. To the contrary, the Office of Technology Assessment, the Departments of Energy and Transportation, the Insurance Institute for Highway Safety, all the major automotive companies and other recognized experts have found that the requirements of S. 279 would result in a radical change in the size and performance of the new motor vehicle fleet.

Finding Number 14

Despite recent increases in gasoline prices and Federal gasoline taxes, there is no evidence that the current market alone will achieve significant improvement in fuel economy.

This finding has no factual basis. The August-December 1990 increase in the price of gasoline saw almost a 5% decrease in consumption according to Department of Energy statistics. It is the consumption of gasoline that is the sole critical measure of the success of any program to mandate increased motor vehicle fuel economy improvements.

Finding Number 15 An increase in fuel efficiency in the light duty vehicle fleet of 20 percent by 1998 and ~ percent by 2201 would save 2.5 million barrels of oil per day by. 220S. This is over 8 times the amount of oil expected to be available through drilling in the Arctic National Wildlife Refuge, and almost 4 times the amount of oil imported from Iraq and Kuwait prior to the Iraqi invasion of Kuwait. This level of improvement also would reduce carbon dioxide emissions by ~ million tons per year by 220S.

Because of the uncertainty of the relationship between increased new vehicle fuel economy and reduction in the consumption of gasoline, it is impossible to state, let alone prove, that a 40% improvement by 2001 in new motor vehicle fuel economy would save "2.5 million barrels of oil per day (bpd) by 2005". The DOE estimate is about 500,000 bpd. There are no data or studies to show that these enormous savings would occur.

In conclusion, our members have been at the forefront of the use of fuel efficiency improving technologies. They intend to continue adopting technology as it becomes available. We do support the goal of achieving greater efficiency as part of a comprehensive energy strategy. However, as recognized in the New York Times editorial of March 7,1991, S. 279 uses the wrong approach; it is overly stringent, and its benefit claims are based on erroneous assumptions.

STATEMENT OF AMERICAN SUZUKI MOTOR CORPORATION

American Suzuki Motor Corporation ("ASMC"), with headquarters in Brea, California, respectfully submits the following comments concerning S. 279, "The Motor Vehicle Fuel Efficiency Act" in connection with the February 21, 1991 hearing of the Senate Consumer Subcommittee. ASMC is the authorized importer and distributor in the continental United States of Suzuki automobiles imported from Japan and Canada.

ASMC's parent company, Suzuki Motor Co., Ltd., for years has made fuel efficiency a top corporate goal and a primary ingredient of its marketing strategy. Reflecting this commitment, Suzuki-produced automobiles have received the number one fuel efficiency rating from EPA for model years 1986-1991 in both the passenger car and the light truck categories. ASMC understands the desire for further improvements in automobile fleet fuel efficiency because of concerns about oil imports and global warming. ASMC does not oppose legislation to advance these goals, as long as (a) the same requirements are applied to all manufacturers, and (b) the requirements are fair and effective.

However, ASMC submits that S. 279 is not an appropriate means to achieve these goals. This bill is essentially the same as S. 1224, which was introduced in the previous Congress, and, therefore, points made in opposition to that bill are equally valid here. The bill's percentage-over-1988-achievement approach is unfair, especially to recent market entrants such as ASMC. Also, the bill's approach is harmful to Congress' interest in fleet fuel efficiency, American consumers, and the long-term competitiveness of the domestic auto industry.

I. BACKGROUND

During the period since the enactment of CAFE requirements in 1975, the fleet fuel efficiency of the U.S. automobile fleet has increased substantially. Asian imports have contributed greatly to this increase in fuel efficiency. While part of the reason for imports' fuel efficiency is that imported vehicles are, on average, smaller than automobiles produced by Detroit's Big Three, there is no doubt that a major reason for the greater fuel efficiency of imports is the more aggressive development and application of advanced technology by foreign producers. This has been demonstrated through the analysis of Congress, Office of Technology Assessment. [1] The same point has been recognized by Deborah Bleviss, a proponent of fuel economy legislation:

Japanese manufacturers can clearly claim the honor as all-round leaders in fuel economy innovation. Not only do they have a strong presence in every component of such innovation—for example, engines, transmissions, and so on—but they also have a presence in virtually every advanced technology within these components.

[There is] a greater willingness by Japanese automakers to bring the fruits of their research . . . into production relatively quickly. . .their industrialized competitors who are at the forefront, American light-vehicle manufacturers appear to be at the "back of the pack" in the race to develop more efficient technologies.

Deborah Lynn Bleviss, The New Oil Crisis and Fuel Economy Technologies 127, 132 (Quorum Books 1988) ("Bleviss"). In addition, Senator Albert Gore, Jr. — during the September 7, 1989, hearing — recognized this fact, stating that "the real situation . . . is that [imports) have gone farther on efficiency improvements . . . .

Suzuki's experience epitomizes the fuel efficiency of imports, but also presents a unique situation that would be very adversely impacted by S. 279. Suzuki has had as a longstanding corporate goal the manufacture of highly fuelefficient passenger cars. In a market where there are a number of competitors, Suzuki has concentrated on its expertise in this area to develop and maintain a market niche. Beginning in the 1986 model year, Suzuki produced fuel-efficient passenger cars for General Motors which have won the number one EPA mileage rating each successive year. First, it was the Chevrolet Sprint, which in 1986 had an unadjusted 61.5/76.4 mpg rating, in 1987, 59.7/74.5, and in 1988, 59.7/74.S. In the 1989, 1990 and 1991 model years, it is the Suzuki produced GM Geo Metro, with a 59.2/74.7 unadjusted EPA rating that leads the country in fuel efficiency.

Apart from Suzuki's production for GM, in model years 1985-88 a very small number of Suzuki-produced passenger cars similar to the vehicles produced for GM—were sold under the Suzuki brand name by independent distributors in Hawaii, Puerto Rico and U.S. territories. No Suzuki-brand passenger cars were sold in the continental U.S. in those years. It was on the basis of these very limited sales that Suzuki was assigned a CAFE number of approximately 50 mpg by EPA for model year 1988.

In model year 1989, ASMC launched the sale of passenger cars under the Suzuki name in the continental U.S. with a new passenger car model line. This new model line is the Suzuki Swift. The Swift is a subcompact model and very fuel efficient (one version has the fourth highest EPA mileage rating for model year 1991). However, the Swift is slightly larger than the earlier Sprint, and uses a 4 cylinder engine in contrast to the Sprint's 3 cylinder engine. For this reason, ASMC's passenger car CAFE for 1989 was 36.7 mpg.

Suzuki achieved its high mileage ratings by using advanced technology to improve engine and drive train efficiency and aerodynamics, and to reduce overall weight while maintaining substantial passenger/cargo space. For instance, Suzuki developed the most fuel efficient automobile through the use of a small 1.0 liter engine, light weight materials, advanced technology, and innovative component design approaches such as hollow camshafts and crankshafts.

(See Attachment A for a more detailed profile of Suzuki's application of advanced technology.)[2]

Beginning in model year 1990, Suzuki produced passenger cars at a plant in Ontario, Canada which is operated as a joint venture between Suzuki and General Motors. ASMC has been importing and distributing Suzuki Swifts produced in Canada.

Suzuki plans over the next few years to introduce several additional passenger car models. These new models are absolutely necessary if Suzuki is to survive in the U.S. auto market. Without a significant market presence, Suzuki will find it difficult, if not impossible, to attract and maintain a viable dealer network to handle its automotive products. Consistent with Suzuki's expertise, the new models it plans to introduce are expected to be relatively small and highly fuel efficient. However, in order to meet consumer needs, such cars are likely to be somewhat larger and—though more fuel efficient than competitors' comparable automobiles—less fuel efficient than Suzuki's existing models.

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[1] See Statement of Steven E. Plotkin, Global Warming and Cafe Standards: Hearings on S. 1224 Before the Subcomm. on the Consumer of the Senate Comm. on Commerce, Science and Transportation, 101st Cong., 1st Sess. 71-73 (1989) ("May 2, 1989 Hearing"). These comments cite the 1989 hearings because the transcript for the 1991 hearings is not yet available.

[2] The attachments were not reproducible.

S. 279 would adversely impact ASMC and other new market entrants by freezing them in the smallest-car segment of the market. For similar reasons, it would also negatively impact Suzuki with respect to light trucks. For these and other reasons, S. 279 would be unfair to ASMC and harmful to a variety of interests Congress seeks to protect.

II. The Percentage Approach is Unfair and Counterproductive

A. S.279 Unfairly Penalizes Those That Have Accomplished The Most

The approach of requiring each manufacturer to increase its fleet's fuel efficiency by a percentage over its corporate average fuel efficiency level achieved in 1988 is a radical departure from traditional legislative approaches. It would require companies which achieved higher fuel efficiency levels in 1988 to achieve new levels higher than other manufacturers, involving both greater absolute increases than required of other manufacturers and an ever- widening disparity between them in fuel efficiency. This approach is certainly very different from all other legislation affecting automobiles, such as safety or emissions requirements which impose the same standard on all manufacturers.

The only argument that has been offered in support of S.279's approach is that it requires all manufacturers to make an equal effort to improve fuel economy. However, this is fallacious reasoning. Manufacturers have not made equal efforts in the past, and this bill would impose a requirement of greater efforts on those who have, by any objective assessment, made the greatest efforts in the past. As Congress' Office of Technology Assessment has pointed out regarding the predecessor bill:

[T]he structure [of S. 1224] ignores the fact that at least a portion of the current differences in companies' CAFEs are due to . . . the companies' different efforts at moving advanced technology into their fleets. Thus, this type of standard penalizes manufacturers who have tried the hardest to increase their fleet fuel efficiency in the past. They now have the most difficult technological challenge, because they have already "used up" a larger portion of the technological headroom available to them from off-the-shelf technology. Companies that have hesitated to use the best available technologies — the companies we would like to motivate the most — are instead rewarded by being presented with the lowest efficiency target.

Memorandum of Steven E. Plotkin, Senior Associate, Office of Technology Assessment, to Linda Lance, June 22, 1989.

Sen. Gore made a similar point at the September 7, 1989, hearing, noting that ". . . the real situation . . is that

[imports] have gone farther on efficiency improvements and, therefore, the . . . easier gains are not as readily available to them . . . and then a percentage by a manufacturer approach would make it harder for somebody that has already taken that step than for somebody who has yet to take the easier gains." (September 7, 1989, Hearing at 49.)

For these reasons, S. 279 would unfairly penalize companies, including ASMC, which have a very good record on fuel efficiency and have achieved it through great effort.

B. S.279 Undermines Fuel Efficiency Goals

Although its supporters assert that S. 279 is the best approach to improving automobile fuel efficiency, in fact it would undermine fuel efficiency goals in several ways.

First, it would inhibit companies from exceeding their minimum required CAFE levels in the future for fear that such improved performance might become a new, onerous benchmark for future requirements. This would be a very reasonable fear, and it would apply to all auto manufacturers. Those companies which did the least in the past to increase their fleet's fuel efficiency would fare the best under S. 279. Those which would face the lightest burdens are the manufacturers which for 1988 did not even meet the statutory requirement of 27.5 miles per gallon (including one of the domestic Big Three). These companies would have strong reasons to continue taking a minimum approach and to avoid exceeding the CAFE levels required by S. 279, for fear that fuel efficiency achievements in the future will become a new benchmark for required improvements. In fact, if the S. 279 approach were to be adopted, automakers might well be concerned about exceeding other minimum requirements, such as in the emissions area, for fear that the S. 279 concept might be adopted elsewhere.

Second, the interaction of S. 279 with some consumer preferences could well lower the overall achieved fuel efficiency of the fleet. Consumers may well choose to purchase automobiles from manufacturers with lower CAFE requirements. As previously stated by Congress' Office of Technology Assessment:

[T]here is the possibility that consumers may not place a high value on the increased levels of fuel efficiency, and thus may tend to prefer lower efficiency vehicles from the "favored" companies, because their price tags don't include the costs of the most advanced technologies. Also, it is possible that companies that wind up with the lowest efficiency targets could use the leeway these lower targets afford them to increase vehicle performance to levels that companies with higher efficiency targets may not be able to match (because higher performance reduces fuel efficiency).

Memorandum of Steven E. Plotkin, Senior Associate, Office of Technology Assessment, to Linda Lance, June 22, 1989.

Significantly, the power of consumers to cause a lower overall fleet fuel efficiency was the basis for the requests made by domestic manufacturers to the Department of Transportation to lower the CAFE requirements for model years 1985-88. Since S. 279 would impose lower CAFE requirements on some manufacturers, this would allow such manufacturers to produce less efficient cars which

consumers are likely to prefer. Overall, the result undermines the goal of improved fuel efficiency and fleet carbon dioxide emissions reduction.

Third, while some concern has been expressed about fuelefficient manufacturers' upsizing their vehicles, which has been referred to as "backsliding," the effort to prevent this through S. 279 will be counterproductive as to fuel efficiency. S. 279 will prevent manufacturers with higher CAFE ratings (such as Suzuki and other importers) from upsizing (to subcompact, compact or mid-size automobiles, depending on the manufacturer), and, for some, may even require further downsizing. This would exclude Suzuki — producer of the highest mpg cars — from competing fully even in the subcompact segment of the market. More generally, it would exclude from major segments of the auto market the manufacturers which have been most aggressive in improving fuel efficiency. Given the needs of many consumers for mid-size cars, such cars will continue to be purchased. The net effect of S. 279 would not be to reduce the number of such cars sold, but only to assure that they are produced by companies with the least fuel-efficient fleets. This result undermines the goal of improving overall fleet fuel efficiency.

It is counterproductive and perverse to exclude from certain segments of the automobile market those manufacturers with the greatest demonstrated capacity and resolve for achieving fuel efficiency improvements. If Congress decides as a matter of policy that mid-size and large cars should not be provided to the American public, that is one thing. However, to exclude the most fuel-efficient manufacturers from these segments of the market by burdening them with higher CAFE requirements would — wholly apart from equitable considerations — undercut the goal of having each size automobile produced for American consumers be as fuel efficient as possible.

For these reasons, adoption of S. 279 would not have the beneficial effects of reducing carbon dioxide emissions and the need for oil imports to the extent predicted. Additionally, as discussed below, S. 279 would undermine other significant interests.

C. S.279 Harms Consumer Interests

As a corollary to the points discussed above, S. 279 would harm the interests of American consumers by restricting competition. As noted by Congress' Office of Technology Assessment,

Because their fuel economy targets are based on the 1988 makeup of their fleets, automakers who now focus on small cars will have great difficulty in changing their mix towards larger cars. This would lessen competition in an important segment of the market.

Memorandum of Steven E. Plotkin to Linda Lance, June 22, 1989.

The effect of new entries into the U.S. auto market over the past twenty years has brought great benefits to American consumers by providing new product offerings and by putting much greater competitive pressures on the Big Three to be responsive to consumer interests. Because S. 279 would make it difficult for additional entrants to compete with the Big Three in the mid-size market, it will harm consumer interests. It will provide fewer choices. And — by giving the Big Three the security of knowing they need not fear competition in that market segment — it will, as history reminds us, reduce the critical competitive pressure needed on those manufacturers to improve their product offerings. The study by Deborah Bleviss concludes that the rate of development of new fuel economy technology is closely tied to the level of competition in a particular market segment. See Bleviss at 142-146. Thus S. 279 will be prejudicial to consumer interests by limiting choice not only with respect to various fuel efficiency approaches but also with respect to other product features.

The goal of fuel economy legislation should be to put manufacturers in the same position so that they can compete fully across the board. Our economic system is based on the benefits of competition.

D. S.279 Would Harm the Long-Term Competitiveness of the U.S. Automobile Industry

In opposing S. 1224, which contained the identical uniform percentage approach as S. 279, the Department of Justice noted in its letter to Chairman Bryan, dated January 26, 1990, that

By increasing fuel economy requirements in this manner, S. 1224 may limit competition in the sale of larger vehicles, and even undermine fuel efficiency goals. Manufacturers with high average fuel economies will be impeded in entering U.S. markets for larger cars because such entry — even if they produce more efficient larger cars than are currently available — could prevent them from meeting the new standards. Thus, competition would suffer and fuel efficiency of a whole category of vehicles could be kept artificially low.

See Attachment B.

These concerns are precisely those shared by Suzuki for itself and similarly situated Asian importers.

A major concern expressed in the U.S. these days relates to the extent to which the American economy has suffered from U.S. producers having foregone opportunities in the past to develop or apply advanced technology in a number of areas. (For instance, American auto makers had for many years declined to compete for the small car segment of the auto market.) American analysts attribute some of this to the tendency of American industry to focus on the short run. See Bleviss at 149, 15S.

In this connection, Sen. Albert Gore, Jr., expressed the view at the September 7, 1989, hearing that S. 1224 (now S. 279) could undermine the long-term competitiveness of the American automobile industry. The Senator expressed a concern that, if lower fuel efficiency burdens were placed on the Big Three than on their import competitors, American companies would take it easy while others . continue to actively seek improvements in fuel economy. He was concerned that such a difference could leave the domestic companies at a competitive disadvantage in the future. 3 Because develop-

ments in fuel economy technology are accompanied by other competitively valuable advances (See Bleviss at 140-142), this could involve a substantial problem for the domestic producers.

Others have expressed a similar, narrower concern, namely, that because domestic auto companies are already behind in developing fuel economy technology, unless they are pushed by government policies to step up their accomplishments in developing fuel economy technology, they will be unprepared for another oil crisis and would suffer substantial market share losses if such a crisis were to occur. See Bleviss 229-232.

3 Sen. Gore said, "If we enact restrictions that [have) the longer- term effect of forcing only foreign manufacturers to make the next generation of efficiency improvements, might we face the situation a few years from now where our manufacturers have taken the easier route and . . . because [foreign manufacturers) are under the extra pressure, they make the big leap to new advances and all of a sudden they come to our shores with dramatically more efficient vehicles, the next generation of technology, and we are right back in the soup with American manufacturers at a disadvantage." September 7, 1989 Hearing at 49.

III.Conclusion

We appreciate the opportunity to present ASMC's views on S.279. We would be pleased to work with the Subcommittee to develop ways to achieve its goals without the injurious effects discussed above.

STATEMENT OF THE AMERICAN INTERNATIONAL AUTOMOBILE DEALERS ASSOCIATION

The American International Automobile Dealers Association represents the more than 9,700 franchised new car ad truck dealers who market international automobiles in the United States. Our members ad their 240,000 employees sell and service imported cars and trucks in the United States, as well as vehicles produced domestically by their international automobile manufacturers. We appreciate this opportunity to address the Consumer Subcommittee on our views of S.279, legislation to increase the Corporate Average Fuel Economy (CAFE) standard.

S. 279 will require each manufacturer and importer to improve its CAFE by 20 percent beginning with 1996 model year cars and light-duty trucks, and 40 percent by model year 2001. It will also double current fines for failure to comply.

The stated intent of S. 279 is to reduce both the U.S. dependence on foreign oil and the amount of carbon dioxide emitted into the air by automobiles. We believe that these are laudable goals and should be addressed in a manner that is effective and comprehensive. While we believe that the present CAFE regulatory system is inefficient and easily manipulated. we do not oppose legislation to increase automobile fuel efficiency. Our concerns lie in the unrealistic and discriminatory percentage increases required by this bill. We feel that this bill would inflict serious harm upon American small businessmen, forcing may of our member dealers to close their dealerships, which will result in a significant loss of jobs.

S.279 is ill conceived lion. It will fail to achieve its intended goals, unjustly Rise present achievement of high fuel economy and destroy any incentives for progress m future fuel economy technology. S. 279 also has serious implications for U.S. trade relations.

l. Drastically higher CAFE standards are not a panacea for U.S. dependence on foreign oil.

Some claim that the U.S. has not learned its lessons from the gas crises of the 1970s and that the fuel efficiency of the U.S. automobile fleet is partly to blame for the current U.S. dependence on foreign oil. Yet, since 1974 the total U.S. new car fleet fuel economy has improved 100 percent as the industry downsized vehicles and reduced the weight of the average car by 1,000 pounds. Despite these dramatic changes in the automobile industry, current statistics show that the U.S. remains ~ dependent on foreign oil than it was in 1974.

Merely enacting legislation to force drastically higher CAFE will not reduce our dependence on foreign oil. New cars and light trucks represent only a fraction of U.S. petroleum usage each year and it takes 10-15 years to get the impact of new standards spread throughout the total car fleet. The standards proposed in S.279 would have a minimal impact on U.S. petroleum usage (one study predicts a reduction of about 4 percent by 2004). The dramatic changes in U.S. automobile fleet fuel economy in the last two decades did not prevent the latest jump in fuel prices, nor could S. 279 be expected to prevent even higher run- ups in the future. A comprehensive energy plan that uses market forces (e.g., a carbon fee) is needed to reduce U.S. dependence on foreign oil.

II. S.279 will create a black market in corporate average fuel economy. and a franchIse nightmare for retail automobile dealers in the U.S.

The current CAFE regulatory system has two standards, one that manufacturers must achieve in their "import" fleet ad another that they must achieve in their "domestic" fleet. By establishing manufacturer-specific standards through a percentage-based formula, S.279 would create more than 40 different regulatory standards for the industry — two standards for each of the approximately 20 manufactured importers. In short, this legislation would create regulatory chaos. (See the attached

excerpt from an Automotive News article for examples of how the current CAFE regulatory system creates a "puzzle" for manufacturers, which they must solve to comply with the standards.)

In a effort to meet the standards of S.279, some manufacturers may choose to merge companies—in effect merging fuel economy averages. Creative manipulation of the CAFE regulatory system to comply with the "corporate average" fuel economy standards of S. 279 would not be new. Ford recently sourced more parts for its large cars (e.g., Crown Victoria) from Mexico to place them in Ford's "import" CAFE category and thereby lower its domestic fuel economy average.

Mergers of automobile companies are not unlikely if CAFE standards similar to those proposed in S.279 are enacted. A manufacturer with a low fuel economy average that would otherwise effectively be forced out of the U.S. market by the standards of S. 279 would have little choice but to merge with another manufacturer with a higher fuel economy average to remain in the U.S. market. Mergers of this sort would have no positive effect on U.S. automobile fuel economy, but would create a franchising nightmare for dealers of these products.

Dealers are prevented by state franchising laws from owning a franchise within a specified range of another franchisee of the same product. In the event that mergers do occur, a dealer who owns one or the other franchise could find that he or she no longer has the legal right to sell the resulting product in that area - making his franchise worth nothing.

To sum, S.279 would force manufacturers to play more games with the CAFE system. The effect would be no net increase in U.S. automobile fuel efficiency and tremendous losses for retail automobile dealers who have significant, life-long investments in their franchises.

III. The percentage-based standards of S.279 penalize high fuel economy achievement while destroying future incentives.

Importers as a group have done the most to develop ad successfully market fuel efficient automobiles, having been in the forefront of fuel economy research and development. They have introduced turbochargers and superchargers, to provide additional horsepower for small engines without increasing fuel consumption. And they have developed multi-valve technology, providing improved fuel economy with greater horsepower. The major Japanese manufacturers all have CAFE levels in the low 30's, as compared with domestic companies which will barely meet the minimum standard of 27.5 miles per gallon for 1990.

With percentage increases instead of flat, numerical increases in the CAFE, this bill penalizes those who have invested the most in fuel economy technology and have subsequently achieved the highest fleet averages, well above that required by the present CAFE standard. It demands the least from the largest segment of the market (domestically-manufactured vehicles comprise approximately 70 percent of the U.s. automobile market), while making disproportionate demands on a relatively small mare segment that has led the industry in attaining superior fuel economy standards.

The use of percentage-based CAFE increases clearly sends a message to manufacturers, domestic and import, which is counterproductive to future improvements in fuel economy technology: Exceed the standard ad the United States government will make your compliance even more difficult in the future. And this message could spread to well beyond just the automotive industry. S.279 could set a precedent for all industries facing the prospect of government regulation. Furthermore, this legislation would have the unintended effect of stifling the creative genius that may some day help solve future pollution and fuel economy problems.

IV. Government-mandated cars will seriously affect an imported automobile dealer's ability to survive in today's market.

As policy, S.279 is self-defeating. This legislation may succeed in forcing fuel economy technology on automobile manufacturers at a great cost, but it will ultimately fall to meet its intended goals because in our free market economy consumers cannot be forced to purchase those vehicles. Forcing technology that has not been fully developed, ad at a pace which leaves no room for manufacturers to prepare or adjust production schedules, will require dealers to sell cars that are too expensive ad have neither the performance characteristics nor the room that customers desire. This will leave a tremendous burden on dealers to sell cars that few people want to buy.

Because of the wildly disproportionate effect that percentage increases in CAFE (as opposed to numerical ink) will have on the various manufacturers, dealers of imported automobiles will be restricted to a limited class of vehicles. Japanese and European manufacturers will effectively be forced out of the mid-sized ad luxury automobile markets. Potential customers will simply look elsewhere (most likely to less fuel efficient domestically-manufactured vehicles) for lower priced vehicles with more power and interior space, defeating the original intent of this legislation. This will unfairly, and without basis, put imported automobile dealers at a competitive disadvantage. Some limited-line manufacturers could even be shut out of the U.S. market completely.

V. CAFE increases wilt have a de minimis effect on global warming: other solutions are more effective and cost-efficient.

Legis l ation to address global waning should be global in scope. Efforts to reduce CFCs and restrict deforestation on a world-wide basis can have a much greater impact on global warming than the mere effect of increasing the CAFE in the United States. This legislation falls to recognize the potential of those issues, instead placing the entire burden on one segment of the U.S. economy. The United States has taken a world leadership role in regulating its automotive industry with introduction of CAFE standards in 1975 and the 1977 C1ean Air Act, and has continued to show that leadership with the

recent passage of the new C1ean Air Act. As a result, the United States will have some of the most stringent emissions standards in the world.

Real solutions to global problems must include international cooperation. To assert that these CAFE increases alone will effectively address our warming problems is inaccurate and will create a false sense of accomplishment.

VI. A carbon fee is a more effective and comprehensive method of reducing fuel consumption and CO9 emissions.

One of the most efficient ways to reduce fuel consumption and emissions of carbon dioxide is through a carbon fee. A carbon fee is a free market solution to a fundamental market issue. As seen in the 1970s a substantial increase in the cost of gasoline will increase the demand for more fuel efficient vehicles ad reduce the total number of miles driven. Increases in the CAFE standard, however, do not provide the customer any incentive to reduce fuel consumption. Instead, it limits choice ad artificially increases the price a customer will pay for the average automobile.

Moreover, CAFE only applies to new model vehicles, having no effect on the millions of cars ad trucks already on the road today. Due to fleet turnover, S. 279 would no effect fuel consumption for another 10 years, a carbon fee would impact e~ automobile on the road immediately. Furthermore, substantial revenues would be raised with the fee; and U.S. gasoline prices would be brought into line with world prices.

VII. S. 279 would unfairly discriminate against imports and violate GATT.

A percentile CAFE increase would constitute a blatant non-tariff barrier, since it would establish discriminatory and far more stringent fuel economy standards for imported vehicles than it would for domestically-produced automobiles.

The major imported automobile manufacturers presently maintain higher fuel economy standards by employing most, if not all, available technologies. The opportunity for large improvement in their fuel economies, therefore, is severely limited in comparison to the domestic manufacturers who do not employ all existing technologies. Furthermore, percentage increases would require these manufacturers, who have consistently provided fuel efficient cars, to numerically ink their fuel economies ~ than the domestic manufacturers.

The proposed percentile ink would violate the international obligations of the United States under the General Agreement on Tariffs and Trade (CAT"'). Article 11(4) of the GATT provides that national treatment should be provided for all requirements affecting the internal sale of products. The percentile increase technique, however, would have the effect of discriminating against imports and would deny national treatment. Furthermore, the Agreement on Technical Barriers to Trade signed by the United States in 1979 requires that the United States not impose standards on technical regulations which have the effect of creating unnecessary obstacles to trade, which the proposed CAFE standard would do. In short, S. 279 is discriminatory, denies national treatment, and would be import-limiting in effect.

Driving the European and Japanese manufacturers out of the mid-size and luxury car markets would be very expensive for the American consumer and would fuel inflation. Domestic manufacturers, free of price competition in those markets, would predictably raise prices on their mid- size and Luxury models. The additional costs to consumers, sure to result from this legislation, could be as great as the expense of the Japanese voluntary restraint agreement, which costs U.S. car buyers as much as $12 billion each year.

VIII. Any change in the present CAFE standard MUST BE FAIR TO ALL.

A. Any change in the present CAFE standard must be based upon that standard, not on the individual level of performance that has been achieved by the various manufacturers. Percentage~based CAFE standards penalize the most responsible manufacturers without fulfilling the intent of the legislation. As it stands, S.279 is fundamentally biased.

B. Congress should not mandate solutions when free market answers are available. The free market has always provided the best solution to market issues (one example is the industry's response to the 19705 oil crisis) ad it will continue to do so, if allowed. At the very minimum. manufacturers must be granted the opportunity to use alternative methods other than CAFE to achieve the goals of this legislation.

C. If Congress is intent on using percentage increases, it must also allow credit for historical performance by the individual manufacturers. Without credits. major import manufacturers would be forced to drastically and immediately alter their production schedules.

causing great hardship on these companies and the thousands of dealers who rely on their

D. Finally, and very importantly, this legislation must include an exemption for limited-line manufacturers who sell less than 100,000 units annually in the United States. the percentage-based CAFE increases would destroy dealers of those limited lines while having a trivial impact on global warming or fuel conservation. Percentages set so unreasonably high for these manufacturers can only be seen as an attempt to put them out of business in the United States. At a time when the U.S. is striving to keep European markets open as the European Community moves closer to economic integration, such a blatant restriction of the U.S. automotive market would only serve to damage U.S. interests in the E.C.

Instead of the unrealistic percentage increases, these manufacturers should be given a free market incentive to produce more fuel efficient vehicles that are realistically within their manufacturing and marketing capabilities.

We thank the Subcommittee for this opportunity to express our views on S.279 and look forward to working with the Subcommittee to develop legislation that will responsibly and equitably address the genuine concerns presented by U.S. dependence on foreign oil and the global warming issue.

STATEMENT OF PHILIP M. SMITH, EXECUTIVE OFFICER, NATIONAL ACADEMY OF SCIENCES/NATIONAL RESEARCH COUNCIL

Mr. Chairman and members of the Subcommittee. This statement will describe the evaluation that will be undertaken by the National Research Council (NRC) of the prospects for improving the fuel economy of new automobiles and light trucks in the United States. The Research Council as you know is the operating arm of the National Academies of Sciences and Engineering. I am the Executive Officer of the NRC and with the NRC Chairman Frank Press am responsible for the overall management of our institution. I will comment briefly on the study and also on our process—the NRC process as we call it—for it is the process of our work that gives credibility to National Research Council conclusions and recommendations. I will not offer any views on fuel economy or strategies for achieving increased efficiency as it would be inappropriate at the outset of the study.

The Study Objectives

The study was initiated by the Department of Transportation's National Highway Traffic Safety Administration. The fundamental purpose of the study is to estimate fuel economy levels that can be practically achieved in the next decade in new vehicles while meeting existing and pending environmental and safety standards.

Initiated at the end of December, 1990, the study is to be conducted in two phases. The work under Phase 1 is scheduled to be completed by June 30, 1991 and that under Phase 2 by March 31, 1992. Phase 1 of the study will provide, on a "best judgment" basis, estimates of fuel economy that can be achieved by size class of vehicles (e.g., full-sized, mid-sized, compact, and subcompact passenger cars, and large and small light trucks).

The study will, among other things, take into consideration provisions of the Clean Air Act Amendments of 1990; the state-of-the-art, worldwide, in the applications of technologies relevant to achieving higher fuel economy and improving safety; and the viability of the domestic automotive industry in the U.S. market.

In addition, principal barriers that may constrain the rates at which technologies enhancing fuel economy can be introduced and sustained in the marketplace will be identified.

Specifically in Phase 1, the committee will address the following: It will evaluate technologies in conventionally powered cars and light trucks that could, in the time frame of the next decade, contribute to improved fuel economy of new vehicles. It will identify and describe the principal barriers to the introduction in the United States of the technologies underlying the improvements in the fuel economy of new vehicles. It will prepare estimates by vehicle size class of the fuel economy gains that can be practically achieved in the United States in the next decade. The Committee will also prepare estimates, by vehicle size class, of costs and benefits to the consumer attributable to higher fuel economy, and the incremental annual cost, in aggregate, to the automotive industry in producing such vehicles.

The Committee will not, however, address the formulation of new corporate average fuel economy (CAFE) standards. Nor will it, in Phase 1, address other public policy measures to achieve greater fuel economy in new vehicles.

A Phase 1 report setting forth the committee's findings is to be completed by June 30, 1991. The proceedings of a workshop to be held during the first Phase will also be produced as part of the Phase 1 documentation. This schedule is extremely ambitious for a study that depends on the volunteered time of experts. We are endeavoring to ascertain that those who do agree to serve have sufficient time to devote to this important project but understandably people of the caliber we are seeking will already have substantial commitments for the next four months. It is possible that we can not meet it and we have so advised the NHTSA Administrator, General Curry.

In the second phase of the study, as it is currently envisioned, the Committee will analyze in greater detail the principal barriers to the commercial application of technologies to improve fuel efficiency. We also anticipate that the Committee will address measures to overcome these barriers. A more specific definition of the second phase will be developed as the first phase of the study unfolds. The report of Phase 2, following Academy review, is scheduled to be completed by March 31, 1992.

The Committee We are in the process of appointing the committee to carry out this study. The committee will reflect the range of expertise needed to deal with the issues underlying the study. This expertise will include areas such as the following: automotive technology, fuels, manufacturing, environment, safety, financial practices and markets, federal and state regulations, consumer behavior, and automotive industry/U.S. economy interactions. The Committee will invite presentations, to be delivered at committee meetings and in the Phase 1 workshop, from domestic and foreign

automobile manufacturers and their suppliers; from representatives of qualified organizations closely involved with but functioning outside of the automotive industry per se; from other relevant parties (individuals, firms and other entities in the private sector, and government agencies).

The Committee will avail itself of the data in the public domain and obtain or develop new information, as needed, for its deliberations. Additionally, the Committee may commission expert written reviews of selected topics, for example, trade-offs in automotive design of weight versus safety.

The NRC Process

NRC studies gain their credibility from a number of elements of our process and procedures that in aggregate make our studies of technical and scientific issues and our recommendations to government somewhat distinctive. Key elements of the NRC approach are:

Independence. As an institution we are totally independent of government even though we are chartered by Congress to advise government. We guard this independence carefully, making sure we are not influenced by either government or organizations and individuals.

Voluntary Public Service. The thousands of scientists, engineers, physicians and health care workers, and others, who serve on NRC committees do so without compensation. Thus, their advice is not "contracted for" in the usual sense. The Research Council itself receives no fee from government for its services.

Appointment of Expert but Balanced Committees. In each project we attempt to assemble a knowledgeable, technically expert panel. We also assemble a balanced panel in its overall mix of scientific expertise and perspective. We seek analysis. Individuals known to have extreme views on issues central to the study are often invited to present their advocacy position to the committee rather than being invited to serve on the committee itself.

Expert Staff. A staff of professional science, technology, and public policy analysts at the National Research Council serve the appointed panels of individuals who contribute their time to the NRC. The staff assigned to a study is experienced and technically expert.

Examination of Potential Sources of Bias and Conflicts of Interest. All members of the NRC panels are required to complete a statement that outlines financial interests, public statements and positions on subjects, past government service, current research support by government and industry and other information relevant to the task at hand. Additionally, the committee at an early meeting itself reviews these issues. On some occasions we ask an individual to step down because of a conflict.

Consensus Reports With Recommendation.

The NRC strives to achieve consensus reports. Occasionally we do not. And, we strive to reach clear conclusions and recommendations as reports with conclusions and recommendations are more helpful to public officials in the Executive Branch agencies and the Congress than reports that offer various points of scientific view.

Review. All reports of the National Research Council are reviewed by a group of experts other than the authors prior to their release. The review process adds further to the credibility of the report. The review process is supervised by a report review committee whose members are all members of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. Finally, undergirding this process is the credibility of the Academy of Sciences whose 1863 Congressional charter established it as the premier scientific advisor to the government of the United States and as a public service organization.

Conclusion.

Thank you for the opportunity to describe the study of automotive fuel efficiency we have now begun. We know the deep interest this subcommittee and others of the Congress have in our work as well as the keen interest of the Administration, the private sector, and public interest organizations. We will endeavor to fulfill the trust placed in us.

STATEMENT OF THE GOODYEAR TIRE & RUBBER COMPANY

Almost a year-and-a-half ago, we submitted testimony to this committee opposing S. 1224 on the basis that its mandates for higher CAFE standards were unreasonable given the limits of existing technology and the potential costs that it would impose on automakers, their suppliers and consumers.

Times have changed, however, our opposition to more stringent fuel economy standards has not. While the new CAFE bill, S. 279, was introduced in the midst of a war that underscores our dangerous dependency on foreign oil, we cannot ignore that this measure also comes at a time when the auto and auto-related industry is suffering from its worst slump in nearly a decade.

We're not here to argue that auto fuel conservation is not a worthy policy goal. We believe it is, but only if it can be achieved at a reasonable cost, over a reasonable period of time and within reasonable limits. S. 279 fails on all counts. As a major supplier to auto manufacturers worldwide and an active partner with them in the search for greater fuel economy, Goodyear is in a position to corroborate their testimony.

The industry has been pushed to its technological limit. The only other option available, within the time frame of S. 279, is further vehicle downsizing and weight reduction. The end result is an

unacceptable compromise in vehicle safety and a model mix that is likely to raise a chorus of disapproval from consumers.

We continue to maintain that any reasonable approach to energy conservation must emphasize market incentives. Let laws of supply and demand create markets for fuel efficient vehicles.

In the meantime, Congress should focus its attention on other initiatives to achieve the important objectives of energy security and the reduction of auto emissions. Programs such as alternative auto fuels, scrapping old cars and developing more efficient highways have great promise and we'll look at these in more detail later in the testimony.

As we pointed out, Goodyear is well aware of the technological barriers to greater fuel economy and its costs. We have been working closely with automakers to improve fuel efficiency through the development of tires that have lower rolling resistance. To date, we've achieved some dramatic improvements while maintaining the safety and durability of the product.

In fact, since the heyday of the old bias-ply tire, through the evolution of today's technologically sophisticated, high-performance radial, we have improved rolling resistance by 50 percent. Some 30 percent of that total was achieved since 1975, when Congress first mandated fuel economy standards. That represents a 6 percent decrease in fuel consumption — or a 1.5 mpg gain in fuel economy.

We will continue to make improvements, however, they're going to be modest and far more costly than earlier gains.

Even incremental improvements in rolling resistance will require a major technological breakthrough or the discovery of exotic new materials.

You've heard from the automakers about unacceptable tradeoffs in performance and safety. The same applies to our product.

Reduction in rolling resistance is a complicated equation that requires years of evaluation and many changes in compounds, polymers and constructions. Anything short of this compromises ride comfort and safety.

For example, a rock hard compound and higher air pressure will provide a significant reduction in rolling resistance. Unfortunately, it also dramatically reduces the tire's ability to grip the road in turns or stop safely. That same tire probably would last no more than a year and ride comfort would be nearly nonexistent.

In short, safety is compromised for the sake of a few miles-per-gallon, a prospect that no one should be forced to accept.

Nevertheless, Goodyear Chairman Tom Barrett continues to challenge our engineers and researchers to find ways to reduce tire rolling resistance without the trade-off of traction and treadwear. We also continue to work closely with automakers on a variety of projects involving fuel efficiency, including some extraordinary programs like General Motors' electric car.

However, these programs are long-term. Dramatic improvements in the short time frame contemplated by S. 279 would require the diversion of funds for a massive research and development effort at a time when Goodyear, like its competitors and its customers, are struggling.

Conditions in worldwide auto markets — particularly North American — have taken a heavy toll. There are simply too many cars and too many tires, chasing too few buyers.

The Big Three have recorded their lowest sales since 1982 and, at one point, recently had more than 41,000 workers on temporary layoff. Goodyear also has been forced to make painful reductions in its workforce.

As a result, we are extremely sensitive to legislation that loads another layer of costs on an already strapped industry while generating products that consumers may reject.

Funding a search for a fuel efficiency breakthrough may divert dollars needed for investments for periodic expansion and modernizing of existing facilities. Plants like those in Danville, Va., Union City., Tenn. and Lincoln, Neb., may have a difficult time attracting future investment.

We believe a balanced, diversified approach must be employed to reduce our energy consumption and combat global warming.

In addressing these issues, Goodyear sees some encouraging ideas in the President's National Energy Strategy. Incidentally, many of these ideas we proposed to the subcommittee in earlier testimony.

The Federal government's proposal to provide incentives to state and local government to rid the road of older, inefficient, gas-guzzling vehicles is an idea that has a great deal of merit. Scrapping these vehicles — there are nearly 54 million of them on the road that are 10 years or older — would have a significant impact on fuel conservation and smog-producing emissions.

The development of alternative transportation fuels is an idea that we have supported in the past. We encourage the government's program of purchasing new alternative-fuel vehicles for its civilian fleet to increase incentives for the manufacture of alternative fuel vehicles and a range of fuels.

Finally, we can't stress enough the critical need for a long-term program to improve the efficiency of the nation's transportation system. Such a program, if adequately funded, would result in significant fuel savings and curb harmful auto emissions.

The numbers from a recent General Accounting Office study provide startling evidence of the need for more efficient highways.

According to the GAO, urban traffic congestion will increase 300 percent by 2005, wasting some 7.3 billion gallons of fuel.

Furthermore, a Highway Users Federation report indicates that highway travel has increased more than 27 percent in the last six years and vehicle miles now total: mind-boggling two trillion a year. They are predicted to increase to three trillion by the year 2000.

Meanwhile, our infrastructure continues to come apart at the seams. Congress could insure better fuel economy cleaner air by making it a priority this session to act the reauthorization of the federal highway bill which expires on the last day of September.

In fact, it should go further and take action to gradually release the nearly $20 billion in the Highway Trust Fund for the rebuilding of our deteriorating highways and bridges.

Another part of that program (noted in the President energy strategy), should include a plan to develop intelligent vehicle-highway system technology to increase transportation efficiency and reduce gridlock idle time.

Taken together, we believe these programs contain the right mix of incentives and carefully balance the objectives of energy security, a stable economy and a cleaner environment. If all also falls, we would hope the committee will consider the results of the Department of Transportation-sponsored National Academy of Sciences study before it acts on S. 279. We have confidence that the study will develop a valuable set of guidelines to follow in determining feasible fuel economy standards and their impact on vehicle safety. Let's give this issue a long hard look before we plunge headlong into a policy that will have serious implications for a industry that is the heartbeat of the American economy. We hope this testimony is helpful to the subcommittee and the full committee in its future deliberations. We will be happy to provide further clarification on any of the above points, if needed. Thank you.

INSURANCE INSTITUTE FOR HIGHWAY SAFETY,
February 22, 1991.

The Honorable Richard H. Bryan,
Chairman Consumer Subcommittee, Committee on Commerce, Science, and Transportation, Washington, DC

Dear Senator Bryan:

At yesterday's hearing on S. 279, Motor Vehicle Fuel Efficiency Act, before the Consumer Subcommittee, Mr. Marc Ledbetter of the American Council for An Energy Efficient Economy challenged data presented in the enclosed issue of Status Report (September 8, 1990) concerning the occupant death rates before and after downsizing for the General Motors (GM) car lines.

Mr. Ledbetter raised a question about the GM results because the downsized cars are newer than their larger predecessors and, on average, newer cars travel more miles. We have completed some additional analysis to clarify these results. There are two countervailing effects: Newer cars travel more miles on average than older cars and thus have a greater exposure to involvement in crashes. Thus as cars age, the risk of being in a crash decreases. On the other hand, seat belt use is higher in new cars and thus the risk of a fatality in a crash of a new car is lower. Seat belt use in older cars is lower and thus the risk of fatalities in crashes of older cars increases.

There simply are no reliable data available to adjust for these two effects and, in fact, it is unnecessary to do so, since a much more reliable basis for comparison exists. The occupant death rates for the GM cars that were not downsized for the model years involved in each of the before and after comparisons provide ideal comparison groups because the vehicle age-related effects will have the same influence on both the downsized car lines and the remainder of the GM fleet.

We have computed these results for the unchanged GM cars for the model years compared in the original Status Report table (they are shown in the attached chart together with the original results). As you can see, in most instances the results for the unchanged GM cars show either no increases or decreases in death rates for the newer cars in each comparison group. In the few instances where there are increases in the death rates, they are smaller than the increases for the downsized cars. These results further confirm that the GM downsizing led to increased occupant death rates.

The staff of the Consumer Subcommittee has also requested information concerning the relationship between occupant death rates and fuel economy shown in the same issue of Status Report. The relationship between occupant death rates and fuel economy was derived as follows: The natural logarithms of deaths per 10,000 registered passenger cars during calendar years 1986-88 in 1985-87 four-door models were regressed on EPA estimates for fuel consumption miles per gallon (mpg), the natural logarithm of the proportion of occupants in cars driven by drivers age 30 and over, and the natural logarithm of the proportion of occupants in cars driven by female drivers.

Miles per gallon, driver age, and driver sex explained about one quarter of the death rate variability (R-square = 0.26). Overall the regression was statistically significant at the 0.01 level of significance (p 0.005, F(3,43) = 4.9). The coefficient for mpg was 0.039 indicating that each one gallon of decrease in fuel consumption was associated with an average 3.9 percent increase in death rate. The t statistic for testing the null hypothesis of no association between mpg and death rate was rejected at the 0.05 level of significance.

Another issue in the fuel economy debate that is not being correctly addressed is what was demonstrated about small cars and occupant safety in the federal government's Research Safety

Vehicle (RSV) program, and specifically about the performance of the Minicar RSV. Contrary to a number of claims, the Minicar RSV was not particularly fuel efficient; its actual fuel economy rating that would be used in corporate average fuel economy calculations was 33 mpg. Furthermore, the Minicar RSV is not a family sized vehicle although it has an outer body that is comparable in size to a Chrysler New Yorker, the interior is little bigger than a sports car. Its seating is basically 2+2;the rear seat isn't big enough to accommodate a child safety seat. The RSV did demonstrate some important safety concepts including air bag protection in high speed frontal crashes. Its side impact protection, however, involved features such as thick foam filled gullwing doors with windows that could not be opened, and a very high side floor sill, which are not likely to be acceptable in cars sold to the general public. The handling characteristics of the RSV were found to be poor and, in fact, The Honorable Richard H. Bryan February 22, 1991 Page Three were rated as unsafe when it was tested in Germany in 1980.

Finally, some people are continuing to point to the fact that the motor vehicle death rate per mile traveled is the lowest it has ever been. They say this proves that present fuel economy standards haven't imposed adverse safety effects. But this argument is specious because the overall motor vehicle death rate isn't the right statistic. For one thing, it includes all kinds of deaths — motorcyclists, bicyclists, pedestrians and other categories of deaths that have nothing to do with car size — and the decline in the mileage rate during recent years is largely due to declines in these other deaths, particularly motorcyclist deaths, which are down 25 percent since 1983. The correct statistic is the passenger car occupant death rate.

The mileage death rate is too general to gauge anything as specific as the impact of car downsizing. Many factors have contributed to an overall improvement in the highway safety picture since fuel economy standards were introduced and cars were downsized. Most states have enacted safety belt use laws, for example, and more people are buckling up. We as a society are taking alcohol-impaired driving more seriously than we used to. This major problem has been addressed with tougher laws and enforcement programs. Plus, baby boomers have grown up, so there are fewer young, high-risk drivers on our streets and highways. These and other changes more than offset the negatives associated with smaller cars, which is why the per-mile death rate is going down.

But just because we're making headway in some directions — for example, against drunk driving — doesn't mean we should downsize the automobile fleet and allow more people to die in small cars. The mileage death rate would be even lower than it is today if cars hadn't been downsized.

The Institute supports all sensible steps to conserve fuel, including improved fuel economy that does not result in smaller cars. Before embarking on requirements that would lead inevitably to smaller, less safe cars, a full and fair consideration of the substantial impact on highway safety is essential. I request that you make this letter and its enclosure a part of the hearing record.

Sincerely.

BRIAN O'NEILL, *President.*

Deaths per 10,000 Registered Cars in Calendar Years 1985-1989
GM Models Before and After Downsizing

	Car Type Downsized	Before Downsizing		After Downsizing		Percent Change in Rate
		Model Years	Death Rate	Model Years	Death Rate	
1.	B Car	1975-76	1.2	1977-78	1.4	+ 17
2.	C/D Car	1975-76	1.1	1977-78	1.2	+ 9
	All other GM	1975-76	2.2	1977-78	2.2	0
3.	A/G Car	1976-77	1.7	1978-79	1.8	+ 6
	All other GM	1976-77	2.5	1978-79	2.6	+ 4
4.	E Car	1977-78	0.9	1979-80	1.1	+ 22
	All other GM	1977-78	1.9	1979-80	1.8	- 5
5.	X Car	1978-79	1.9	1980-81	2.2	+ 16
	All other GM	1978-79	1.9	1980-81	1.7	- 11
6.	A Car	1980-81	1.5	1982-83	1.5	0
7.	F Car	1980-81	2.3	1982-83	3.3	+ 43
	All other GM	1980-81	1.8	1982-83	1.7	- 6
8.	Y Car	1981-82	3.9	1984*	4.4	+ 13
	All other GM	1981-82	1.7	1983-84	1.7	0
9.	C/D Car	1983-84	1.0	1985-86	1.3	+ 30
	All other GM	1983-84	1.9	1985-86	2.0	+ 5
10.	B/H Car	1984-85	1.1	1986-87	1.4	+ 27
11.	E Car	1984-85	0.9	1986-87	1.5	+ 67
	All other GM	1984-85	2.1	1986-87	2.3	+ 10

Results for downsized cars are in bold type.

1. 1975-76 compared with 1977-78 model Chev. Impala, Caprice; Pont. Catalina, Bonneville, Gr. Safari, Grandville; Buick LeSabre; and Olds Delta 88

2. 1975-76 compared with 1977-78 model Buick Electra; Cadillac Calais, DeVille, Fleetwood Brougham; and Olds 98

3. 1976-77 compared with 1978-79 model Chev. Malibu, Chevelle, Monte Carlo; Pont. LeMans, Gr. Prix, Gr. Am; Buick Century, Regal; and Olds Cutlass

4. 1977-78 compared with 1979-80 model Cadillac Eldorado and Olds Toronado

5. 1978-79 compared with 1980-81 model Chev. Nova, Citation; Pont. Phoenix; Buick Skylark; and Olds Omega

6. 1980-81 Chev. Malibu; Pont. LeMans, Grand Am; Buick Century; and Olds Cutlass (exc. Supreme, Calais) compared with 1982-83 model Chev. Celebrity, Pont. 6000, Buick Century, and Olds Cutlass Ciera

7. 1980-81 compared with 1982-83 model Chev. Camaro and Pont. Firebird

8. 1981-82 compared with 1984 model Chev. Corvette.
*Downsized Corvettes were introduced early in calendar year 1983 and called 1984 models.

9. 1983-84 rear-wheel-drive Buick Electra, Olds 98 (exc. wagon) and Cadillac Deville, Fleetwood (exc. limo) compared with front-wheel-drive 1985-86 models

10. 1984-85 compared with 1986-87 model Buick LeSabre and Olds Delta 88 (exc. wagon)

11. 1984-85 compared with 1986-87 model Buick Riviera, Cadillac Eldorado, and Olds Toronado

Note: N Cars (Buick Somerset/Skylark, Pont. Gr. Am, Olds Calais) aren't included because downsized 2-door models were introduced in 1985, 4-door in 1986

U.S. CHAMBER OF COMMERCE,
Washington, D.C. Maarch 5, 1991.

The Honorable Richard Bryan,

Chairman, Consumer Subcommittee, Committee on Commerce, Science, and Transportation, U.S. Senate, Washington, DC.

Dear Chairman Bryan:

The U.S. Chamber of Commerce appreciates this opportunity to submit its views on legislation to increase corporate average fuel economy (CAFE) standards. The Chamber recognizes that conservation is necessary to extend the availability of petroleum supplies and to provide more time for the development of alternative sources of energy. However, as a general rule, any mandatory conservation program will stifle innovation, create inefficiencies, and reduce consumer choice. Such results would follow from the current CAFE proposals.

The costs of CAFE standards clearly outweigh the benefits. A 40 percent increase in CAFE standards, as proposed in S. 279, would compromise vehicle safety and restrict the choice of new vehicles available to the consumer. The intended reduction in fuel use from the proposed increase in CAFE standards could take at least 10 years as the stock of vehicles in the country turns to the new smaller cars.

Domestic new car fleet fuel economy has improved 100 percent since 1974. Last year, one-third of all car models offered for sale in the United States had EPA city/highway ratings of at least 30 miles per gallon (mpg), thus exceeding current CAFE standards. This increase in fuel economy was primarily accomplished by weight reduction and the downsizing of vehicles. The weight of the average car fell from 4058 pounds in 1975 to 3116 pounds in 1989.

Further improvements in fuel economy, as proposed in S. 279, cannot be accomplished without additional reductions in vehicle size and weight. It is estimated that weight reductions on the order of 800 to 1000 pounds may be required. Current market trends, however, clearly point toward larger-sized vehicles. In 1989, a number of subcompact cars were available with ratings of at least 40 mpg. Yet these cars attracted less than 3 percent of U.S. new car sales. Consumers faced with the unavailability of family sized cars may choose not to purchase new cars, keeping their old cars longer or turning to the used-car market for larger vehicles. Should this happen, energy savings would be negligible.

In addition, further downsizing of vehicles will result in thousands of unnecessary fatalities and injuries. People in small cars are injured more often and more severely than those in larger cars, because smaller vehicles have less structure, mass, and size to absorb an accident's impact. This is a matter of basic physics, and little can be done by way of design or legislation to overcome it.

The average fuel consumption of all cars on the road will continue to decrease as older, less fuel-efficient vehicles are replaced by more efficient models. Manufacturers continue to broaden the application of efficient technologies across their model lines, and are accelerating efforts to develop alternate fuel vehicles. Energy policies based on the market economy can best ensure the timely achievement of our energy goals, and have already begun to do so. Manufacturers will supply consumers with higher mileage vehicles as they want them — or they will not sell cars.

As part of this statement, we are including a recently published article by T. G. Moore, former member of the President's Council of Economic Advisors and currently a Senior Fellow at the Hoover Institution, Stanford University. This article, "The Unresolved Conflict between Auto Safety and Fuel Efficiency," appeared in the Journal of Regulation and Social Costs, September, 1990, pages 71-87.

Sincerely,

DONALD J. KROES, *Vice President.*

Enclosure. [1]

BMW OF NORTH AMERICA, INC.,
February 20, 1991.

The Honorable Richard H. Bryan,
Chairman, Consumer Subcommittee, Committee on Commerce, Science, and Transportation, U.S. Senate Washington, DC

Dear Chairman Bryan:

In September of 1989, BMW wrote to you expressing our concerns about the inequities in the CAFE program. After study of your proposed CAFE legislation S. 279, we would like to offer the following additional thoughts.

BMW understands, and, indeed, agrees with the necessity for all manufacturers to improve the fuel economy of their vehicles.

However, the CAFE program as currently structured does not really require that all manufacturers improve the fuel efficiency of all of their products. The problem is that CAFE is constructed with an averaging concept which is designed around the capabilities of a full line manufacturer. Limited line manufacturers, such as BMW, are not able to take advantage of this averaging concept, even though their vehicles' fuel economy ratings are similar to vehicles of like class which are produced by full line manufacturers.

The result is that more than 50% of the automobiles sold in calendar year 1989 had fuel economy values of less than 27.5, but less than 3% of those vehicles were subject to CAFE penalties.

In fact, 100% of the CAFE penalties are borne by those European limited line manufacturers whose total US market share is less than 3%. By placing such a large financial burden on such a small number of manufacturers, CAFE currently gives an undue competitive advantage to full line manufacturers who can produce and market all types of products without that burden.

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[1] The article was not reproducible and is in the subcommittee files.

The bill you have introduced now further, aggravates this situation by indexing to inflation the fuel economy penalty beginning in the 1992 model year, instead of 1996. This is a significant change, and should be accompanied by sufficient lead time for manufacturers.

BMW customers have many choices in the marketplace, and among those choices are similar vehicles whose manufacturers are not subject to CAFE penalties. This gives those manufacturers a significant competitive advantage. Certainly, BMW is concerned about such market distortions which directly affect our customers' decisions.

One may also think that overburdening the limited line manufacturers is a reasonable price to pay in order to improve fuel economy. However, these manufacturers are the ones who voluntarily lead the industry in the implementation of safety and environmental technologies; these technologies are the ones which then later penetrates through the rest of the industry.

Should the limited line manufacturers find some of their products so competitively disadvantaged as to be virtually forced out, other manufacturers who are able to "play the averaging game" will quickly substitute vehicles of this type. Of course, those manufacturers with an abundance of fuel economy credit would be most likely to take advantage of such substitutions. Thus, the net effect is to reduce competition, and arbitrarily substitute one manufacturer's vehicles for another's, and as a result, there will be no net improvement in fuel economy.

This is, however, not to suggest that limited line manufacturers should be able to avoid fuel economy improvements. They should not. Indeed, all manufacturers should show an upward trend as revealed by the EPA's own report (EPA/AA/CTAB/90-91), which demonstrated that BMW's overall fuel economy between 1988 and 1990 did improve. In fact, BMW was the only manufacturer who showed an upward trend. Thus what we are suggesting is that all manufacturers should share the responsibility for improving.

We therefore believe strongly that the CAFE program needs reform, with the following objectives:

Program should lead to overall fuel economy improvement. Program should be equitable to all manufacturers. Program should be technologically and economically feasible. Program should promote safety and environmental goals.

The percentage improvement concept outlined in your bill, if applied equally across all manufacturers, does have the potential of accomplishing the first objective. However, the percentage must be applied to all manufacturers evenly in order to achieve the second objective.

For example, your bill would require a 20% improvement for only some manufacturers. For BMW, the percentage improvement to the floor of 27.5 is actually almost 28%.

We believe it appropriate that the required percentage increase in fuel economy should apply to all manufacturers equally, and require all to improve by the same percentage. Therefore, no minimum fuel economy in miles per gallon is needed.

In order to achieve the fourth objective, the bill should contain some method of encouraging safety and other environmental goals. There should be a program of credits which would promote the implementation of safety features and alternative fuel concepts.

BMW is confident that with modifications such as outlined above, including a percentage increase that is technologically and economically feasible, your bill can achieve your overall objective of improving fuel efficiency of the total fleet.

BMW appreciates the opportunity to comment on this important bill and would ask that these comments be included in the Hearing records.

Thank you for r consideration.

Very truly yours,

KARL M. GERRINGER, *President*.

STATEMENT OF MITSUBISHI MOTORS AMERICA, INC.

Mitsubishi Motors America, Inc., on behalf of its parent company, Mitsubishi Motors Corporation (collectively referred to as "Mitsubishi" hereinafter), is pleased to have the opportunity to submit comments on S. 279 for consideration by Consumer Subcommittee of the Senate Commerce, Science, and Transportation Committee.

Mitsubishi has aggressively pursued the development and introduction of the latest fuel efficient technologies into its passenger car fleet (see Attachment 1). Our commitment to the goal of improved motor vehicle fuel efficiency is also demonstrated by the fact that our passenger car fleet average has exceeded the corporate average fuel economy (CAFE) standard each year since 1983, the first year Mitsubishi sold vehicles in the United States under its own name (see Attachment 2). Furthermore, as a multi-line manufacturer we are continually striving to improve the fuel efficiency of all our vehicle models while, at the same time, providing vehicles that satisfy consumer demAND.

CONCERNS REGARDING S. 279

Despite our strong commitment to the goal of improved motor vehicle fuel efficiency, we have a number of concerns regarding S. 279, a bill that would require new CAFE standards.

This bill, if enacted into law, would require each vehicle manufacturer to increase its CAFE by 20 and 40 percent in the 1996 model year and the 2001 model year, respectively. These uniform percentage increases are to be based on each manufacturer's fleet average achieved during the 1988 model year.

Mitsubishi believes that the uniform percentage increase approach is patently unfair in that it clearly penalizes those manufacturers that have historically achieved the highest CAFE levels by requiring them to achieve a greater numerical increase than those manufacturers who have failed to optimize the fuel economy of their vehicle fleets in the past. It erroneously assumes that manufacturers have the same penetration of fuel efficient technologies in their fleets, and therefore, can attain the same percentage increases.

In addition, this approach would be a significant shift in regulatory policy by requiring manufacturers to comply, for the first time, with different standards. It would also serve as a disincentive for manufacturers to voluntarily exceed the CAFE standards in the future since the CAFE level achieved could be used as a baseline for a new standard.

Regarding the required increases of 20 and 40 percent, these levels are far beyond what Mitsubishi could expect to attain. Given that we have already adopted many of the fuel efficient technologies at significant penetration levels in our fleet (see Attachment 2), it would be extremely difficult technologically to achieve significant increases in fuel economy at this time. Therefore, in order for Mitsubishi and other high mileage manufacturers to achieve significant increases in fuel economy, downsizing and weight reduction of their fleets, which are already composed of generally smaller vehicles, would be required. In addition, the adoption of new materials and the development of new technology, which are not available today, will take considerable time and be very costly. The end result is that Mitsubishi would likely have to market vehicles that are not acceptable to most of today's consumers because they either lack the size and performance demanded by these consumers or are too costly.

A direct consequence of this approach is that low mileage manufacturers who have postponed downsizing and adopting fuel efficient technologies will be placed at a distinct advantage in the market place over their higher mileage counterparts who have developed and applied fuel efficient technologies much earlier. For example, if one assumes that the market share of each vehicle size class in the attached chart prepared by the Office of Technology Assessment (OTA) remains constant over time (see Attachment 3), then the high mileage manufacturers who currently produce subcompact and compact vehicles will lose approximately 38.4 percent of their market share in 1995 (1996, based on the effective date in S. 279) if they are forced to downsize and shift their production to subcompact and minicompact vehicles. Conversely, the low mileage manufacturers who currently produce both large and midsize vehicles will gain approximately 26.3 percent of the market share in 1995 (1996, based on the effective date in S. 279) if they are forced to downsize and shift their production to midsize and compact vehicles. Furthermore, if the markets vacated by the high mileage manufacturers are replaced with less fuel efficient vehicles produced by the low mileage manufacturers, then the overall fuel economy of the U.S. passenger car fleet will not achieve the levels sought by the sponsors of this bill.

CAFE ALTERNATIVES

Mitsubishi believes that Congress should consider market-based approaches to increase consumer demand for fuel efficient vehicles in lieu of legislation amending the CAFE standards. However, if Congress concludes that the CAFE standards must be changed, then such changes should be considered in the context of an overall energy program rather than in separate legislation. Further, we believe that it would be prudent for Congress to postpone any action on this matter until after the National Academy of Sciences completes its fuel economy study. This study will determine the extent to which the fuel economy of new vehicles can be improved while meeting existing and pending safety and emission regulatory requirements.

Mitsubishi also believes that there are other alternatives to uniform percentage increase that offer a more equitable, cost effective approach. For example, CAFE standards based on vehicle size classes as proposed by OTA (see Attachment 3) would establish a uniform technological challenge for each motor vehicle manufacturer and create a more level playing field for the industry as a whole. Another possible approach would be a volume average standard, which is another means of regulating fuel economy by relating fuel economy to vehicle size.

Conclusion

Mitsubishi recommends that if the Subcommittee must consider changes to the CAFE standards, the changes should be fair to all manufacturers, be technologically feasible considering safety and emission regulatory requirements, and not severely limit consumer choice.

Attachment 1

MITSUBISHI FUEL ECONOMY IMPROVEMENT TECHNOLOGIES FOR LDVS

Technology	Penetration Rate % 1989MY	1990MY	1991MY (Estimate)	Remarks
Intake Valve Control	0.0	0.0	0.0	variable valve lift, timing control
Roller Cam Followers	78.1	97.7	95.1	
Multi-Point Fuel Injection	78.5	100.0	100.0	
4 Valves per Cylinder	6.0	26.7	27.6	
Aerodynamic Improvements*	--	--	--	
Transmission Improvements: a. lockup converter	96.1	98.4	91.8	A/T
b. electronic control	55.4	54.6	88.1	A/T
Overhead Cam	100.0	100.0	100.0	
Front Wheel Drive	99.8	95.6	94.0	
Continuously Variable Trans.	0.0	0.0	0.0	
Improved Accessories (e.g., elec. cooling fan)	100.0	100.0	100.0	elec. cooling fan
Advanced Friction Reduction* (low friction rings/pistons)	--	--	--	
4-Speed Overdrive Transmission	55.4	54.6	88.1	A/T
5-Speed Overdrive Transmission	0.0	0.0	0.0	A/T
Improved Lubrication (5W-30 oil)	0.0	0.0	0.0	
Low Rolling Resistance Tires*	--	--	--	
Weight Reduction*	--	--	--	
Aggressive Transmission Management*	--	--	--	
Idle Off	0.0	0.0	0.0	

*Data not available because of lack of base technology definitions.

Attachment 2

MITSUBISHI CAFE

Model Year	Passenger Vehicle CAFE Standard (mpg)	Passenger Vehicle Fleet Average (mpg)	% Difference
1983	26.0	30.8	+18.5
1984	27.0	31.6	+17.0
1985	27.5	31.9	+16.0
1986	26.0	31.5	+21.2
1987	26.0	31.7	+21.9
1988	26.0	31.2	+20.0
1989	26.5	31.4	+18.5
1990	27.5	30.0	+ 9.1
1991	27.5	30.3 (projected)	+10.2

Attachment 3

Table 5. A FUEL ECONOMY STANDARD BASED ON VEHICLE SIZE CLASS *

Size class mpg goals based on a uniform scaleup from 1988 mpg levels

Size Class	1988 Market Share,%	1988 mpg,actual	1995 mpg,goal
minicompact	.8	37.4	43.3
subcompact	20.4	31.1	36.0
compact	39.2	29.6	34.2
midsize	24.9	26.8	31.0
large	12.9	24.3	28.1
2-seater	1.8	27.2	31.5
FLEET	100.0	28.3	33.0[1]

1. Assumes that the size mix of the 1995 fleet is identical to that of the 1988 fleet.

Source: Office of Technology Assessment, based on Oak Ridge data

* From statement of Steven Plotkin, OTA, before the Consumer Subcommittee of the Senate Commerce, Science and Transportation Committee, May 2, 1989.

STATEMENT OF NATIONAL AUTOMOBILE DEALERS ASSOCIATION

Mr. Chairman and Members of the Subcommittee:

The National Automobile Dealers Association (NADA) appreciates the opportunity to comment on S. 279, Senator Bryan's bill which substantially increases the Corporate Average Fuel Economy Standards (CAFE). NADA is a national trade association representing over 20,000 franchised new car and truck dealers across the country. NADA members are primarily engaged in the retail sale of new and used motor vehicles, both foreign and domestically produced. They are also engaged in automobile service, repair, and parts sales. NADA membership is comprised of small independent business people, located in communities across America and on the average employ 35 workers per dealership. It should be noted that the automobile industry has not escaped the economic recession that the United States is currently experiencing. New passenger car and light truck sales declined approximately five percent in 1990 from 1989 levels. As a result, over 900 automobile dealerships nationwide went out of business in 1990.

In 1975, Congress adopted the Energy Policy and Conservation Act (EPCA) which established an automotive fuel economy regulatory program designed to compel vehicle manufacturers to produce more fuel-efficient passenger cars and light-duty trucks. In the Act, Congress specified across-the-board fuel economy standards for all manufacturers beginning in 1978, culminating in a 27.5 mpg standard for 1985 and subsequent years. S. 279 seeks to change this approach by increasing CAFE standards through a percentage approach on a manufacturer-by-manufacturer basis. Under this proposal, using model year 1988 as a base year, manufacturers are required to increase their CAFE standards 20 percent by model year 1996, and 40 percent by model year 2001. This would result in a crazy-quilt system of fuel economy obligations and we question the wisdom of this approach.

We are also convinced that these higher standards would severely curtail production of many vehicles presently being manufactured. The car manufacturers have advised NADA that these dramatically higher fuel economy requirements can not be achieved through the use of currently available technology without reducing the weight and size of vehicles and restricting model availability. To avoid CAFE penalties, automakers would be forced to restrict the production of most family-sized vehicles including mini-vans, station wagons, and large and medium-sized four- door sedans as well as light-duty trucks.

Although NADA does not have access to information on manufacturer product plans and CAFE projections, our members do have first-hand knowledge of consumer demand in the marketplace. Families will continue to demand large and medium sized vehicles. Not only do these vehicles more adequately meet the family transportation needs, they also have been demonstrated to provide greater vehicle safety. Vehicle utility, convenience, and safety will continue to be major considerations in consumers' purchasing decisions. A number of organizations whose members depend on a wide variety of vehicles for their personal and professional needs have also expressed a concern over the downsizing of cars and trucks that would be necessitated by this legislation. Businesses, agricultural interests, and citizen groups are but a few of the organizations who have expressed concerns over the effects of dramatically higher fuel economy standards.

Clearly, restricting consumer choice was not the intention of Congress when it enacted the original Energy Policy and Conservation Act of 197S. The Committee report to the House-passed version of the EPCA specifically addressed these concerns:

"...the automotive industry has a central role in our national economy and that any regulatory program must be carefully drafted so as to require of the industry what is attainable without either imposing impossible burdens on it or unduly limiting consumer choice as to capacity and performance of motor vehicles. (H.R., Rep. No. 94-340, 94th Congress, 1st Session 87, 1975)

Supporters of dramatically higher fuel economy standards have taken a position that the standards can be achieved without downsizing. Further, they have suggested that even if downsizing is necessary, consumers will buy the downsized vehicles because these vehicles will be the only product for sale. In the long run, this may be true. However, in the short term, the automobile industry will suffer greatly. When family and business consumers come to a dealer's showroom looking to replace their current vehicle and find that no product is available which meets their transportation needs, many will decide to retain their current vehicle for several years. This will result in a dramatic slowdown in new car and truck sales and hundreds of small business dealers will go out of business and their employees will lose their jobs.

The success and well-being of an automobile and truck dealership is very sensitive to new vehicle sales. This is true because of the nature of the business. In the retail new car and truck business, the manufacturer does not sell cars to the ultimate consumer. Independent small business dealers sell the vehicles to consumers. A dealer actually purchases vehicles from the manufacturer and finances these vehicles until they are sold. In the automobile business this financing arrangement is known as floorplanning. Historically, dealers have floorplanned their inventory at interest rates of one to two percent above prime. If the vehicles do not sell, dealers will be forced to finance them for long periods of time. It doesn't take long for a dealer's profit margin to be completely eroded and after that period, a dealer's loss mounts each day. With the average dealer operating on less than one percent profit of gross revenues, a dealer can go broke during even a relatively short period of depressed new car sales.

We sincerely believe that the standards proposed in S. 279 are excessive and could result in widespread consumer dissatisfaction, disruption in both automobile manufacturing and retailing, and dislocation in the work force of manufacturers and dealers alike. NADA feels that additional fuel economy improvements can be achieved, but we hope that Congress and the automobile industry can

work together to structure a realistic program that will not jeopardize consumer needs, the health of the industry, and the job security of thousands of its workers.

Mr. Chairman and members of the Subcommittee, once again we appreciate the opportunity to comment on the Bryan bill, and we will be happy to provide any assistance that the Subcommittee might need in its deliberations on this matter.

MAKE	AIRBAG* DRIVER	AIRBAG* PASS.	AUTOMATIC SAFETY BELTS MOTORIZED**	AUTOMATIC SAFETY BELTS NON-MOTORIZED
BMW				
All Models	X			
CHRYSLER/CHRYSLER				
All Models	X			
CHRYSLER/DODGE				
Daytona	X			
Dynasty	X			
Colt Vista (2-wheel drive)	X			
Shadow	X			
Spirit	X			
Stealth	X			
All Other Models			X	
CHRYSLER/EAGLE				
All Models			X	
CHRYSLER/PLYMOUTH				
Acclaim	X			
Sundance	X			
All Other Models			X	
DAIHATSU				
Charade (4-door)			X	
Charade (3-door)				X (With Manual Lap Belts)
FORD/FORD				
Crown Victoria	X			
Mustang	X			
Taurus	X			
Tempo	(Opt.)		X	
All Other Models			X	
FORD/LINCOLN				
Continental	X	(Opt.)		
Mark VII	X			
Town Car	X	(Opt.)		
FORD MERCURY				
Capri	X			
Grand Marquis	X			
Sable	X			
Topaz	(Opt.)		X	
All Other Models			X	
GM/BUICK				
Park Avenue	X			
Riviera/Reatta	X			
Roadmaster Estate (wagon)	X			
All Other Models				X
GM/CADILLAC				
Brougham				X
All Other Models	X			
GM/CHEVROLET				
Beretta/Corsica/Camaro	X			
Corvette	X			
Caprice	X			
All Other Models				X
GM/GEO				
Prism				X (With Manual Lap Belts)
Metro	X ***			X
Storm	X			
GM/OLDSMOBILE				
98	X			X
88	(Opt.)			X
Toronado/Trofeo	X			
Custom Cruiser (wagon)	X			
All Other Models				X
GM/PONTIAC				
Firebird	X			
Le Mans			X	
All Other Models				
GM/SATURN				
All Models			X	
HONDA				
Accord (wagon)	X			
Civic CRX				X
Civic Hatchback				X
Prelude				X
All Other Models			X	

* Manual lap/shoulder safety belt provided.

** All motorized shoulder belts come with manual lap belts.

*** Convertible only.

MAKE	AIRBAG* DRIVER	AIRBAG* PASS.	AUTOMATIC SAFETY BELTS MOTORIZED**	AUTOMATIC SAFETY BELTS NON-MOTORIZED
HONDA/ACURA				
Integra			X	
Legend (Except LS)	X			
Legend LS	X	X		
NSX	X			
HYUNDAI				
Sonata			X	
All Other Models				X (With Manual Lap Belts)
ISUZU				
All Models	X			
JAGUAR				
XJ6			X	
XJS	X			
MAZDA				
Miata Convert.	X			
RX-7 Convert.	X			
All Other Models			X	
MERCEDES-BENZ				
190E	X			
560SEC	X	X		
420SEL	X	X		
560SEL	X	X		
300SL Convert.	X	X		
500SL Convert.	X	X		
All Other Models	X	(Opt.)		
MITSUBISHI				
3000GT	X			
Precis				X (With Manual Lap Belts)
All Other Models			X	
NISSAN				
NX	X			X
300 ZX	(Opt.)			
Sentra (Coupe)	X			X
Sentra (2-Door)			X	
All Other Models				
NISSAN/INFINITI				
G20			X	
All Other Models	X			
PEUGEOT				
405			X	
505 (StationWagon)				X (With Manual Lap Belts)
PORSCHE				
All Models	X	X		
SAAB				
All Models	X			
STERLING				
All Models			X	
SUBARU				
Justy				X
All Other Models			X	
SUZUKI				
All Models				X
TOYOTA				
Camry			X	
Cressida			X	
Corolla				X (With Manual Lap Belts)
Tercel				X (With Manual Lap Belts)
Celica	X			
MR2	X			
Supra	X			
TOYOTA/LEXUS				
All Models	X			
VOLKSWAGEN				
Cabriolet Convert.	X			
Corrado			X	
Passat GL			X	
All Other Models				X (With Manual Lap Belts)
AUDI				
All Models	X			
VOLVO				
All Models	X			